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THE RÔLE OF INSTINCT, EMOTION AND PERSONALITY IN DISORDERS OF THE HEART

WITH SUGGESTIONS FOR A CLINICAL RECORD*

C. MACFIE CAMPBELL, M.D.
BALTIMORE

In internal medicine, intensive study is devoted to the individual organ or system; it is frequently necessary to pay attention to the way in which the organs are linked together by the central nervous system or by the glands regulating the biochemistry of the body, but no higher integration is attempted. The actual individual is seldom reconstructed for the purposes of the internist; personality is a category that he does not use. So far as the study of personal factors is omitted, the study of the functions of the individual organs is incomplete. Not only does each organ have its definite routine task in relation to the domestic economy; it is also liable at any time to be commandeered for foreign service, when the individual has to react to an external situation of biologic importance. The individual reacts to such a situation in virtue of his innate instinctive equipment, and each instinctive reaction makes its special demand on the various organs. What from the outside is an instinctive reaction may on the inside apppear as an emotional experience; the instinctive flight or hiding from danger is at the same time registered as the emotion of fear. One instinct may conflict with another instinct; one instinctive reaction may be inhibited by another, or by factors more complex than instinct, for not all behavior is instinctive. Tradition or training may check the instinctive tendency to flight.

That part of the instinctive reaction which is inhibited or modified by other processes associated with memories, purpose, ideals, etc., may not manifest itself, but these movements are only the more obvious expression of the instinctive reaction; simultaneously with the movements of flight, actual or inhibited, the whole system is mobilized in the interests of the safety of the individual. Cannon has published interesting detailed studies on the physiology of this mobilization. We may check our tendency to flee, but against our wishes our heart beats wildly, our respiration is modified, our tongue cleaves to the roof of our mouth, our knees knock together and barely support us, and we break out into a cold sweat.

The action of the heart in such a critical situation cannot be understood under the simple categories of internal medicine; the internist is thus confronted with the problems of the instincts and the emotions. This is no unique situation in internal medicine; chorea, exophthalmic goiter and diabetes have already brought up the same situation.

The psychopathologist comes to the same problem from the other side; dealing with disorders, which consist in a maladaptation of the patient to his life situation, he finds that in many cases heart symptoms are prominent. He meets these symptoms in states of morbid anxiety, and in various forms of psychoneurotic invalidism. In the anxiety neurosis the whole symptomatology may be dominated by cardiac symptoms; pseudo-anginous attacks are familiar. There is good reason to look for an explanation of these attacks in conflicting trends of high emotional value or in the actual sex life of the patient.

Even though these complex factors may be the basis of the tension in the patient's life, and of the resultant neurosis, there remains the problem why in one patient the symptoms are cardiac, in another respiratory, for example, asthmatic episodes, and in a third, gastro-intestinal. The psychopathologist, analyzing the complex interplay of forces which make up the patient's adjustment to his environment, that is, his behavior, asks the internist what are the physiologic conditions that make an emotional strain hit one man's heart and another man's stomach. Has the former patient a special type of inferiority of the cardiovascular system, quite independent of instinctive or emotional demands, or are the cardiac symptoms altogether dependent on an unsatisfactory instinctive or emotional life, or in most cases are both factors involved, on the one hand a cardiovascular system constitutionally oversensitive or of low resistance, and *on the other* an instinctive or emotional life that involves a good deal of tension?

In making an intensive study of the heart mechanism in these cases, the internist will contribute much to our knowledge *of the psychoneuroses*. The aim of this paper is, however, to emphasize the other aspect of this collaboration, *namely, the place of the psy*chopathologic examination in the total clinical rec of these heart cases.

IDIOSYNCRASY

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*Owing to lack of space, this article is abbreviated in *The Journal* omission of a tabulation of neuropsychiatric data. The complete cle appears in the reprints, a copy of which may be obtained on cation to the author.

This communication is based on a group of cases studied in the ovascular service of the U. S. Army *General Hospital No. 9,* wood; more than thirty patients were referred for study by Major ody, who chose them out of a service of about ninety patients. paper is published in the hope of suggesting a certain *line of inves*ion, and not with the view of presenting conclusions.

may be illustrated by the fact
dumb by a situation that causes
ow to give way; the difference in
by the fact that the *man* is struck
by a situation that affects others only
mild inhibition of speech, although in common
guage we use the same descriptive term "struck dumb" (compare the word "stupendous"). Most of us soon recover normal control of our limbs after a terrifying experience, but in some the loss of utilization of the limbs may last for weeks or months. Thus functional aphonia and paraplegia are not adequately explained by a mere reference to the situation, the precipitating and the present fostering situation (safety, luxury, laziness, glory), but require some study of the personality in which they have developed.

The same factors have to be considered in dealing with symptoms belonging to the sphere of the vegetative nervous system. The organ that is specially responsive, the degree to which the organ is affected and the duration of the disturbance may vary from individual to individual.

The persistence of cardiac symptoms after a terrify-
g experience may well be due to a constitutional
iosyncrasy or acquired inferiority, owing to which the regulating mechanism of the heart takes considerable time to regain its equilibrium or never does regain it.

ACQUIRED SENSITIVENESS

The very important general principle must be referred to, that every experience tends to modify the later reaction of the organism; after an infection the patient may be left with increased immunity or in an anaphylactic condition, liable to succumb to an apparently trivial invasion; the individual may be sensitized so that he reacts with special intensity to very small doses of a foreign substance.

The same acquired sensitiveness is seen in relation to more complex stimuli; the soldier who has been unnerved by his experience of high explosives may find later that he reacts with extreme sensitiveness to abrupt noises, and in this reaction cardiac symptoms may predominate.

CASE 15.—A private, aged 20, enlisted at the beginning of the war and went through severe training without symptoms; just before going into the trenches he felt unable to hike, and on his first experience of shell fire he was quite unnerved. At each period of firing his heart would flutter, his knees give way, and he had to sit down; he was sent to the rear. At various hospitals the diagnosis of serious heart disease was made, and he felt that he was doomed. On the voyage home two shots were fired; the patient was so sensitized that he was unnerved for the day; it started the heart pains, and he could not sit down but moved about. At U. S. General Hospital No. 9, the physical status was: "Heart normal in size, left border inside nipple line. Sounds perfectly normal. Soft cardiorespiratory murmur in pulmonic area." It was noticed
hat the patient was dyspneic under the mildest series of drill
xercises for the cardiac cases.

The complexity of the problem of many heart cases
ell illustrated by this history. The first indication
ble was an inability to hike shortly before his
vas due to enter the trenches; the next fac-
terrifying bombardment, to which the
more poorly than his comrades,
his previous history had indicated
than the average; the next
he was stamped with the
nd carried with him all the time the feeling that he might last only six months, in fact, might drop dead at any moment. On this account he never went out alone, haunted by the fear of a catastrophe.

Other factors may also be of some moment, if not in this case, at least in similar cases. The patient had deliberately enlisted, he was willing to do his duty, and officially wished to return to France; but beneath his official attitude was a strong emotional undercurrent of a different nature; he had been glad to get back from "that awful country," old and dilapidated and unintelligible, for which he said he "would not give 15 cents."

This repugnance or repressed fear may in some cases not be irrelevant in discussing the persistence of symptoms:

> Present fears
> Are less than horrible imaginings;
> My thought, whose murder yet is but fantastical,
> Shakes so my single state of man, that function
> Is smothered in surmise.

As far as the vegetative nervous system is concerned, present fears and horrible imaginings and memories may have equal value, and it may make no difference whether or not our pride bars these fears from consciousness.

The patient was easily startled, had been upset by target practice on the ship, and reacted vividly if a door was banged. Such reactions are intelligible because the stimulus reproduces in kind if not in degree the original upsetting stimulus. In other cases the stimulus produces a reaction which is not merely excessive, but which seems to bear no intrinsic relationship to the stimulus; the stimulus may derive its value altogether from its previous association with important emotional experiences, even though the memory of the latter has been more or less repressed from consciousness. Anything that tends to reactivate the memory of the initial painful experience may have a disturbing influence on the vegetative nervous system, without consciousness necessarily being aware of it.

This is in line with what we know of the "conditioned reflexes" of the Russian school; the natural reaction of the dog to food exposed includes salivation, an innate and fundamental reflex; by sounding a musical note before the exposure of food on a few occasions one can develop salivation as a response to the musical note, even in the absence of food.

Just as in this conditioned or acquired reflex the mechanism of salivation is touched by a stimulus that has no intrinsic relationship to salivation but only a relationship based on individual experience, so with regard to the mechanisms that regulate the heart: they may be touched by stimuli whose dynamic value rests on associations that it may take some skill to trace.

From the point of view of treatment these considerations may have some importance, and a review of the personal situation with the patient may well supplement the muscular training he receives. Beneath the quite correct surface in the patient just referred to, with his willingness to resume combatant duty, was a latent repugnance to this return, a feeling of sensitiveness owing to having broken down and as to the opinion of others, a vague tendency to justify himself and therefore perhaps to stress unconsciously his cardiac discomfort and disability; at the same time he was still weighed down by the sentence passed on him in France when he was diagnosed as having heart disease.

May it not do such a man good to let him realize that his latent shrinking from battle experience is natural and can be frankly admitted, that no one judges him on that score, that there is therefore no necessity for any special justification, as by invalidism? May not this ventilation of obscure depressing thoughts contribute something to the reestablishment of the cardiac equilibrium and reinforce the influence of the physicians' confident assertion, based on accurate examination, that the heart is essentially sound and simply needs to be toned up?

The study of a selected group of cases from this point of view would be a useful contribution.

A case similar to the one just discussed was that of a private, aged 20, who had gone through hard training in France, falling out only a few times. After exposure to high explosives he became very nervous, reacted vividly to every explosion, felt weak in the knees, and his heart fluttered. He was slightly gassed, was diagnosed as having "tonsillitis and bronchitis," and later "heart trouble." On the voyage home he reacted excessively to some target practice. At U. S. Army General Hospital No. 9, his case was diagnosed as "effort syndrome."

These two cases bring up the question of the relationship of similar heart cases to cases of war neuroses (the term "shell shock" should be strictly tabued; scientifically it is of no value, and practically it gives the soldiers a wrong attitude toward exposure to shell fire, and its results). Do patients like the two mentioned above have a latent cardiac inferiority, not elicited by the tests of peace nor by the ordinary mechanical demands on the heart, but elicited by the severe emotional demands of the field, while in the war neuroses the patients have other types of sensitiveness, their weak spot lying in the motor system or elsewhere? With this conception, two factors have to be studied in each case: 1. What is the intimate mechanism of the cardiac inferiority? 2. What are the more complex factors, emotional and situational, that precipitate and foster the symptoms?

Cases of the foregoing type might for the convenience of further study be grouped from the special standpoint of this article under some tentative head such as cardiac sensitiveness or inferiority of instinctive or emotional response, unless it is clear that the syndrome is intelligible on the simple level of physiology, and does not require the introduction of the more complex biologic factors, instinct and emotion. From the point of view of prophylaxis or the elimination of unsuitable recruits, it is important to note that in the foregoing cases nothing in the history previous to the actual breakdown would have made the examining physician suspect a latent inferiority.

Among the patients examined, a considerable group presented in addition to their cardiac inferiority a variety of anomalies, constitutional or acquired, sufficient to deserve careful study and an accurate formulation. For convenience of reference these cases are here roughly grouped as cases of constitutional inferiority.

DISORDERED HEART FUNCTION IN THE SETTING OF CONSTITUTIONAL INFERIORITY

The term "constitutional inferiority" is vague and without definite connotation; for that very reason it may be used to denote a very heterogeneous group of persons who have perhaps only the one factor in common that biologically they do not have from the start the necessary stuff for a satisfa[illegible] FACTORS UTILIZED [illegible] demands of the environment.

It is true that many diseases, based on [illegible] seem to be inferiority of one organ or system, prevent some, to [illegible] vidual's attaining average efficiency; but [illegible] tement as diseases the general term "constitutional inferi[illegible] is quite inadequate. They are sufficiently specific to be discussed in relation to the special systems, hemopoietic, gastro-intestinal, etc. The term "constitutional inferiority" may then be reserved for the conditions in which the inefficiency of the individual is based on less well defined disorders. At the same time, in each case it is the task of the physician to define as clearly as possible the special nature of the inferiority, and to try to establish the fundamental factors involved.

In patients with disordered cardiac function, who show a more diffuse constitutional inferiority, the problem will arise as to the relationship of the cardiac symptoms to the other manifestations of the inferiority. Are the cardiac symptoms merely manifestations parallel to those of the other systems, are they more fundamental, showing a specific and disproportionate involvement of the cardiovascular system, or are they perhaps to a certain extent secondary to other factors, such as those involved in the complex organization of the instinctive and the emotional life?

Thus a lack of virility and efficiency might well be secondary to an inferior cardiovascular apparatus; but on the other hand much cardiac discomfort and irregularity might be explained by the undue demands made on the heart by a very unstable or oversensitive emotional life, or by a sexual life which, owing to the constitutional inferiority of the patient, was not subjected to normal control.

TYPES OF CONSTITUTIONAL INFERIORITY

The variety of the problems presented by these cases may be illustrated by the material found in the thirty-three patients examined. Seven of these patients (including one from another service) may conveniently be discussed from this point of view. A brief survey of these patients shows that their constitutional inferiority may be referred to three types:

1. An inferiority manifested in prolonged physical invalidism, with little or no definite intelligence defect.
2. An inferiority in which defective intelligence is a prominent factor.
3. An inferiority in which the instinctive and emotional life is of poor quality, while the intelligence is fair.

It may well be that in these subgroups the rôle played by the cardiovascular system is by no means identical, and it will be of interest to make more precise the exact contribution made by the cardiovascular system to the clinical picture. The physical invalidism of the first group may by careful laboratory and bedside studies be withdrawn from the vague group of constitutional inferiority and be formulated in more precise and specific terms. In many of these cases the sequence and mutual connection of the data are not easy to trace, and problems arise such as the rôle of infections, of hyperthyroidism, of exogenous poisons, such as nicotin, etc.

In addition to the purely clinical aspect of these cases, one has to consider the military and reconstructive aspect. With regard to the possible eventual [illegible] to gi[illegible] by the f[illegible] for foreign or domestic service, [illegible] by a s[illegible]em of reconstruction, the physician [illegible] consider more than the cardiovascular aspect [illegible]se, and in estimating the optimal output of [illegible] that may be expected from the patient, a [illegible]ologic analysis is a necessary datum. It is also worth noting that much of the material that is unsuited for military service might possibly be eliminated by the examining boards, if their attention were specially called to the group and if they were allowed to disqualify a registrant owing to the cumulative effect of a variety of symptoms, *no one* of which by itself disqualifies the registrant.

A brief summary of these seven cases may be given.

Physical Invalidism.—Three cases are representative of this type:

Case 16.—A. B., aged 25, "unhealthy for five years," had been accustomed to guard his health, and eschewed wine, woman and tobacco. Five years previously he had felt too weak to walk; he fainted on inoculation and on venipuncture; he was unable to stand up under drill. His case had been diagnosed as "tachycardia, simple chronic myocarditis." He actually presented the effort syndrome. The patient never had been aggressive, but had drifted along in civil life in a passive, invalid way; he had never had any surplus energy and was frequently unable to go to work. In addition to the general weakness and cardiac symptoms, he had gastro-intestinal symptoms.

In this case the respective rôle of physiologic inferiority, of habit and of personality have to be weighed. The history of the patient would indicate his complete unsuitability for the Army, and the problem of treatment involves attention both to his physique and to his morale; the degree of improvement is no doubt strictly limited by the meager nature of his constitutional assets.

The exact nature of the inferiority of the cardiovascular apparatus in the setting of such a case is a problem of interest. In the following case the personality was somewhat more aggressive than in the previous case:

Case 1.—Private C. D., aged 23, had had night terrors and enuresis in childhood; there had been an early diagnosis of heart disease, because he turned blue easily; the mother was oversolicitous. For many years he had thoracic pain and discomfort, and was on this account irregular at work. He was unable to stand the usual training. In France, his case was diagnosed as "myocarditis, postrheumatic"; in U. S. Army Hospital No. 9, "heart normal: neurocirculatory asthenia. Marked vertebral deformity, faulty posture, general asthenia."

In this case the vertebral deformity and resulting posture furnish a more definite basis for the invalidism than was present in the preceding case; while the patient had shown more virility, and had enlisted. He had been rather discouraged by his physical deformity.

For the management of this case a due appreciation of the rôle played by the physical inferiority and by the personal reaction of the patient to his inferiority is important; one must both realize that the patient has his own special limitations, and encourage him to work up to the level of these limitations.

The same situation is illustrated by the following:

Case 10.—Private E. F., aged 23, had made poor progress at school. He was in the third grade at 16, and had nocturnal enuresis until 18. There was a history of occasional fainting attacks between 10 and 12. From 18 to 23 he spent the summers as deckhand on lake steamers, and spent the winters in a semi-invalid way on the farm. He had chronic trouble with his back and recurrent gastric symptoms. He felt weak about the knees. On entering the Army he was unable to support the drill; later he developed pneumonia; on his recovery a partial thyroidectomy was done.

In this case cardiac symptoms were not in the foreground, and the patient presented a diffuse inferiority both physical and mental; the inferiority can no doubt be formulated in much more specific terms.

A patient from another service presented an invalidism in which gastro-intestinal symptoms were more prominent:

Private C. H., aged 27 (the case is not included among those briefly summarized in the tabulation), had been brought up in Russia as a delicate child, and was illiterate. He had nocturnal enuresis till 12; eschewed wine, tobacco and woman (save for one attempt); came to the United States at 19, and managed to support himself by peddling. There was a vague history of stomach trouble for five years. The patient lived on a liquid diet. There were unconvincing complaints about his eyes, which were not improved with glasses. He had no recreations and no initiative. Under drill he immediately collapsed; his Army experience was purely a hospital one. His official assertion of cooperation was, "I like the army; I want to fight for my country" (sic), but he intends to leave it as soon as peace is declared.

Intelligence Defect.—Even in the first group, reference was made to the mental level of some of the patients; for example, Private E. F. (Case 10), in the third grade at 16 (but in a backward farming community), was of somewhat inferior intelligence; but the physical invalidism of these patients was the prominent element in the clinical picture. In the following two cases there was no diffuse physical invalidism, but the constitutional inferiority showed itself in the intelligence and general level of adaptation (e. g., economic) of the patient:

Case 3.—Private I. J., aged 22, as a child had night terrors; chorea from 10 to 12; a poor school record, at 16 being in the fourth grade. He had always had a restless disposition (choreiform reaction?) and auto-erotism with slight hypochondriacal worry. He was very lazy and had no special plans in life. He was extremely ignorant of general topics, and showed little interest in the newspapers. He had mitral stenosis and insufficiency.

In this case we have to deal with an organic heart disorder in a man of poor constitution; the general constitutional inferiority has no special relationship to the valvular disease, although in making plans for his later employment, both factors must be considered. This case, as a control, may warn us in cases of disordered action of the heart against linking up the cardiac symptoms too closely with the other constitutional or acquired anomalies, without very close scrutiny. Both organic and functional disorders may develop in individuals of poor constitution, but these disorders may have a very specific mechanism to which the other constitutional traits are more or less irrelevant.

Case 2.—Private K. L., aged 28, presented a family history in which the maternal grandfather was insane, the maternal grandmother had a terminal psychosis, and the mother was hysterical. Since boyhood he had had respiratory trouble (asthma?); he had occasional night terrors and somnambulism as a child, and nocturnal enuresis even up to the present. At school he was in the eighth grade at 18; he was inefficient, and worked three years for an undertaker for $9 or $10. On entering the Army he was unable to stand the training. The diagnosis was neurocirculatory asthenia.

Inferiority of the Instinctive and Emotional Life.—The following case illustrates a type of inferiority which is less likely to be recognized by the examining boards and in which disciplinary measures may be taken in ignorance of the lack of full responsibility of the man punished. The ability to talk plausibly covers the inferiority of the machinery that gives a man his energy and his quality ("guts," a popular term indicating an appreciation of the rôle of the vegetative nervous system).

CASE 13.—Private M. N., aged 31, had nocturnal enuresis up to Army life; auto-erotism persisting since 14, very occasional intercourse, and ejaculatio praecox. At 20 he attributed lines on his face to auto-erotism. He made satisfactory school progress, but was shiftless in economic life. For three years he was a janitor at $25 a month. He enlisted in the British army, and later in the American Army. Once he fainted and once fell. On duty his knees would give way, his heart would go fast, and he would pant. The diagnosis was neurocirculatory asthenia.

This man was among the best informed of the soldiers examined, but he was the butt of the others, and his history indicates the inferiority of his instinctive life, the lack of driving force, the tendency to drift along in a shiftless way at a low economic level.

CASES WITH EPILEPTIFORM MANIFESTATIONS

Out of the thirty-three cases tabulated, three presented epileptiform symptoms. One of these cases was a definite epilepsy on the basis of an organic brain disease which had been responsible for focal attacks since the first decade of life.

One patient had recurrent migraine headache with hemianopia.

CASES WITH A HISTORY OF NEUROTIC TRAITS

The following patient is of considerable interest; although in adult life he had not shown any overt nervousness, the family history and his reactions as a child would suggest a latent sensitiveness of reaction.

CASE 20.—Private O. P., aged 24, had a maternal grandmother who committed suicide, and a brother who died insane. In childhood he had night terrors, somnambulism, occasional spasms up to 5 years, and nocturnal enuresis till 7 or 8. He had been a timid child. He stood the drill all winter in the United States, but in France soon developed shortness of breath. The cardiac diagnosis at U. S. Army General Hospital No. 9 was somewhat obscure; sinus arrhythmia, cardiac hypertrophy. This case should be compared with Case 4 and also Case 8, in which there is a definite valvular disorder.

UNCOMPLICATED CASES OF DISORDERED HEART ACTION

The foregoing brief summaries may suffice to demonstrate that in many cases with disordered heart action a variety of complex factors, involving such elaborate units or integrations as instinct, emotion and personality, have to be considered. On the other hand, in a great number of cases there is nothing to suggest the importance of these factors; in such cases the problem seems to be a rather specific physiologic problem. In these cases there is no evidence of constitutional inferiority of any type, no neurotic traits, no anomalies in the instinctive life, no important personal conflicts, no history of sensitizing emotional experiences, no fostering situation.

In this group the internist can go boldly ahead with his detailed researches, without feeling that the key to the disorder may be in some factor which from the very start he has discarded. The internist will have here the last word to say, while the psychopathologist has nothing to contribute.

CASE TAKING AND PERSONAL FACTORS UTILIZED IN CLINICAL RECORD

In view of the foregoing data it would seem to be desirable in many cases, and essential in some, to include in the clinical record a summary statement as to the personality of the patient, and as to any experiences and situations that seem to have a direct bearing on his disorder.

In order that the necessary ground may be covered in a systematic way, the following outline is submitted as a guide in making the clinical record, not as a questionnaire to be rigidly followed.

A few preliminary remarks may be of use. The purpose of the examination is to determine (1) whether constitutional factors have played a part in the sickness, (2) whether past experiences have conditioned the present reactions of the patient in a morbid way, and (3) whether present instinctive conflicts or a personal situation of much emotional value may not be contributory causal factors.

REVIEW OF THE CONSTITUTIONAL TRAITS OF THE PATIENT

As to the constitution, or innate equipment of the individual, that can be estimated partly by a study of the stock from which he has sprung and partly by a study of his early reactions to the tests of life, before training and experience have come to play a preponderant rôle.

One will pay special attention to the presence in the family tree of insanity, epilepsy, migraine headache, alcoholism or similar maladaptation, hysterical manifestations, invalid type of reaction, eccentric disposition, and mental defect (from the point of view of intelligence, of emotional stability, or of balanced output of energy).

The early reactions that are suggestive of a special sensitiveness or neurotic instability, especially if they are very frequent and exist in combination, are night terrors (pavor), bed wetting (enuresis nocturna), somnambulism, chorea (a rather heterogeneous group in which toxic and constitutional neurotic factors have to be carefully disentangled), convulsions (tetany, epilepsy), tantrums and exaggerated emotional reactions.

In addition to the nervous stability of the patient one wishes to estimate his general level of efficiency, and to note any serious variation from the average. The level of intelligence may be estimated by the school record, the wage-earning capacity, and the answers to standard questions on general information. Whether the patient has shown any special abnormalities in his emotional life or in his general activity will be found by reviewing his behavior to his comrades, his interests, his reactions, his steadiness at work, and his responsiveness to standards of honesty, truth and decency.

There is a tendency to emphasize the type of constitutional inferiority which shows itself in subnormal intelligence, and to overlook those cases in which the intelligence is adequate but the patient may be perhaps unstable, volatile and superficial; or overactive, enterprising, but lacking in judgment; or unaggressive and timid, lapsing easily into invalidism; or intelligent, and efficient in many ways but not responsive to important moral standards. To formulate the various ways in which an individual may be subnormal in virtue of a defective innate equipment would be an elaborate task; the foregoing remarks merely illustrate the method of estimating the quality of the patient's whole machinery for reacting to the environment.

HISTORY OF THE PATIENT WITH SPECIAL ATTENTION TO EXPERIENCES LIKELY TO HAVE SENSITIZED HIM TO SPECIAL TOPICS

No systematic outline can be given to guide the examiner in this review; so much variation exists in human life that it is not possible to cover all the possible situations that may have influenced the patient's later reactions. One may refer to a few of the more frequent factors by way of illustration:

1. The early reaction of the child to the authority of the father may influence permanently the individual's reaction to all authority, and may be a determinant of an unusually submissive attitude, or on the other hand of an obstinate resistance to authority in all its forms (intellectual, religious, political, military).
2. An early feeling of inferiority in relation to school efficiency or physical endowment or personal traits may bring about an undue sensitiveness and shrinking or, on the other hand, an apparent self-confidence and overassertiveness which is merely a cover for the underlying lack of confidence.
3. Poor methods of dealing with the incipient sexual instinct, with the marked emotional value given to this subject, may seriously complicate the ability of the adult to meet this test in a frank and satisfactory manner. The adult life may accordingly be made unnecessarily difficult because the individual has been sensitized to this topic, has become accustomed to deal with it in a muddled way, and has not come to a frank, independent realization of the whole situation.
4. Any episode of great emotional value may leave the patient permanently modified in his reaction to similar stimuli; just as the soldier, unnerved by high explosives, may for a considerable period be oversensitive to loud and abrupt sounds.

It is important, therefore, to note any striking experiences in the life of the patient, and to consider whether they may not throw light on present symptoms in the way suggested above.

The memory of an experience may have disappeared from consciousness, while a certain emotional attitude with its component physical symptoms may persist. We may have a feeling of dislike for some place or person, without being able to state what past experience or what likeness is at the basis of this attitude. In some the physical component is disproportionately prominent; after a disgusting experience a patient may, perhaps after a considerable interval, develop an intractable vomiting. A terrifying experience may be eliminated from the memory of the patient, except perhaps in dreams; but the tremors, weakness, palpitation, etc., show that his system still vibrates to the experience.

ANALYSIS OF THE SITUATION

The key to some disorders can never be found so long as the physician confines himself to the study of the patient, no matter how intensive that study may be. The headache, backache, weakness, insomnia, timidity, etc., that may follow a railway accident sometimes disappear rapidly when compensation is given in the form of a lump sum, instead of a weekly pension lasting as long as the disability. The change in the method of compensation does not alter directly the joints or other structures of the body; it creates a different situation. It creates a situation that stimulates effort, replacing a situation that puts a premium on feelings of weakness and discomfort. Many forms of invalidism, although deplored by the patient, still have their own gain, bring in certain immunities or privileges and enable one to maintain one's self-respect, to secure sympathy, and to postpone the necessity for grappling vigorously with the actual difficulties of life.

In estimating the degree of disability caused by cardiovascular symptoms, one must consider them in relation to the whole situation, must see whether they play a rôle in the subconscious adaptation of the patient, and must find whether the situation can be altered so that anything that tends to foster the symptoms is eliminated, and everything that can stimulate the healthy activity of the patient may be utilized.

The military situation is obviously an extremely important factor; the physician tries to stimulate the aggressive, healthy trends of the patient, when as a matter of fact the restoration of health leads to the trenches and the toil of war, for which the patient has a deep-seated repugnance, however nobly he may deliberately accept his share in the unwelcome tasks. His conscious, official self is loyal to his civic duty, but his subconscious and instinctive self shrinks from destruction. Any disability is in a way a godsend; the cheerfulness of the wounded when they have got "a Blighty one" is notorious. The physician has to recognize this situation frankly, and to consider by what methods he can counteract any enervating influences, keep burning the flame of resolve, and maintain the morale of his patients. Morale is as important in the hospital as in the trenches; it should be the keynote of reconstruction as of destruction.

The military situation, however, is not the whole story; as in civil life we cover up all the intimate causes of our nervous invalidism by the conventional explanation of overwork, so the stress and the strain of war are apt to be utilized as a blanket explanation of disorders of subtle origin. It furnishes the welcome impersonal formulation; but the soldier has as complex a personality as the civilian, and it is often in the complexities of personal conflicts and difficulties that the explanation of obscure symptoms must be found. The home situation, the attitude to parents, sweetheart or wife, memories of the past, repressed desires and hates and jealousies—these are not irrelevant to the symptomatology of disorders of the heart; language bears witness to that with "heart burning," "heart sick," "his heart was in his mouth," "stabbed to the heart," "fear in his heart," etc.

To analyze the contribution made to the symptomatology of heart disorders by such factors no doubt requires experience, but an open mind and a nice intuition will solve many individual problems with benefit to the patient.

Auscultation.—In auscultation of the chest, it is important to secure close and accurate apposition of the stethoscope to the skin. The object of this is to eliminate those adventitious sounds which are introduced either by a slight skating movement of the instrument on the surface of the chest, or because the whole circle of the chest piece is not making contact with the body wall. Again, it is in order to exclude extraneous sounds that the careful practitioner chooses thick-walled tubing for his instrument, and is particular to detect the first sign of any perishing of the rubber near its junction with the metal and to remedy the fault. (By their stethoscopes ye shall know them).—Sir Thomas Horder, *Practitioner.*

THE MANAGEMENT OF CERTAIN INTRACTABLE LID CONDITIONS *

MELVILLE BLACK, M.D.
DENVER

Seborrheic forms of blepharitis marginalis of long standing are not always easy to dispose of by the correction of errors of refraction and the application of ointment of yellow mercuric oxid. There are probably few present who have not been sadly disappointed in their expectations of a cure from this treatment. In many of these cases there is an underlying systemic cause which is often hard to find and, when found, harder to correct. Long years of uncorrected eye strain, bad hygiene and improper use of food and drink have brought the patient to such a state that our ministrations can at best only partly restore the eyelids to a normal appearance. After the disease has become chronic, it resolves itself locally into a chronic infection of the follicles of the eyelashes. I am inclined to think that it is at first a nutritive disturbance and that the infection is secondary. If several lashes are pulled from such a lid, in a mild state of blepharitis, it will be observed that some of them come away more easily than others and that their roots are black. The lashes, if left alone, would fall out in a few days' time. This disturbance of nutrition may be occasioned by errors of refraction which lower the resistance to infection, or some physical state which acts as the predisposing cause. The correction of the error of refraction and the use of yellow oxid ointment will generally bring about a temporary improvement, but, in the stubborn cases we are considering, the underlying general constitutional cause must be eliminated. In many instances, I do not consider myself competent to do this and prefer to refer the case to an internist in whom I have confidence.

In our altitude, anemia is most frequently found as the underlying constitutional cause. These blepharitic subjects are usually washed-out looking individuals, in whom an examination of the hemoglobin percentage shows it to be low; possibly also the red cell count is considerably below normal. The usual method of giving iron by mouth is of doubtful value, while iron and arsenic, or citrate of iron and manganese given hypodermically, are definite and prompt in their results. There are so many physical disturbances to be considered that we may dismiss the subject with the statement that each case must be studied carefully, and when abnormal physical states are discovered, an intelligent attempt must be made to correct them. I confess that this is often easier said than done, but if the patient is a child, as is usually the case, and the cooperation of the family can be obtained, not only brilliant results follow, but the child has been started on a new road to health and well being.

CHRONIC CONJUNCTIVITIS

In many instances this affection is a very simple affair and responds to a number of different stimulating and astringent remedies. Every now and then, however, we see a case which does not differ from the others in appearance, but which does not respond to local treatment. There is some reason, of course. Errors of refraction have been corrected, but the patient continues to complain of irritation, and the palpebral conjunctiva shows marked signs of being inflamed. A pathologist is called in, but almost always reports, "No growth and no bacteria found." I have worried over many of these cases and still continue to do so. Many of the patients are robust, and nothing can be found physically wrong with them. Others are found to have various systemic disorders, but whether more than are to be found in the average of individuals is a question. It is proper to attempt to correct these physical disabilities, because in a large number of the cases the conjunctivitis is secondary to some physical defect. In a small minority, however, nothing seems to do any good, either in the way of local or general treatment. I hope the discussion will bring out the remedy which I am unable to supply.

EPIPHORA

The overflowing of tears and the frequent filling of the eyes with water is a common symptom in elderly people. It is also frequently seen in comparatively young people who have spent a large part of their lives outdoors. It is always necessary to exclude dacryocystitis by syringing through the duct before it is possible to make a diagnosis of simple epiphora. In senile epiphora the cause lies in the flabbiness of the skin of the lower lids and relaxation of the orbicularis muscle.

The puncta of the lower lids, if inspected closely with a binocular head loupe, are visible without the necessity of making traction on the lower lids. The normal punctum is not visible, being turned in against the eyeball. A certain amount of eversion will not disturb the capillary attraction of fluid, but just as soon as the eversion has passed beyond a certain point, there must be a lake of tears formed before the fluid will flow into the punctum. The efforts of the patient to prevent the overflow by wiping the eyes is usually accompanied by a movement of the handkerchief outward and downward. The relaxed lid is mechanically everted more and more by this faulty wiping until the punctum is found displaced completely outward on a rounded, thickened lid border. It may be so far out of position as not to be functioning at all. From this stage, it is only a step to complete ectropion of the lower lid. The overflowing of tears causes a chronic dermatitis of the lower eyelid and adjacent skin. This leads to skin contraction, and the lid border is pulled on as though contractile collodion had been painted over the skin surface.

In the younger subjects with weather beaten skins, the same process takes place. In these cases, however, the tightly drawn skin over the cheek bones is the primary cause of the outward displacement of the punctum. As soon as it is everted to a position in which the lake of tears forms, the wiping of the eyes and the irritation of the skin from the water flowing over it rapidly causes ectropion of a most pronounced character. I have seen many cases from our cattle ranges in which the fornices of the lower lids were completely exposed as a red granular looking surface, presenting a most repulsive appearance. I have frequently noticed that these very bad cases were in "sandy complexioned" people.

The management of simple epiphora, whether the patient be old or young, depends on the extent to which the puncta are everted. If they are slightly everted, the patient should be directed never to make dragging movements on the lower lids when wiping

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* Read before the Section on Ophthalmology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

the eyes. He should be taught always to make pressure toward the inner canthi. Facial massage with cold cream should be practiced each night for ten minutes, the movements of the tips of the fingers being directed over the skin of the cheeks toward the inner corners of the eyes. Correct wiping of the eyes and this daily massage will usually restore the puncta to their normal position.

If the eversion has passed beyond the stage at which this simple treatment will replace the puncta in their normal positions, more radical measures are in order. It has been my practice to dilate the punctum and then introduce one blade of a pair of Stevens tenotomy scissors vertically down to the bottom of the punctum, the other blade being directed toward the eyeball, and to make a snip of the lid tissue between the two blades. *This cut must be kept open by daily* breaking its lips apart with a punctum dilator, until it remains open. This causes a lowering of the punctum so that the tears will run into it before a lake has formed.

Another method that has given me much satisfaction, especially when the patient lives out of town and is in a hurry to get home, is, after making the vertical snip, to pass one blade of the scissors about 2 mm. along the canaliculus and make a snip, then with a pair of forceps pick up the little triangular flap which lies between and cut it off. This leaves a triangular hole on the inner surface of the lid. Its edges heal in a few days, and usually there remains a large artificial punctum, the lower margin of which gathers in the tears before a lake has formed. No after-treatment is required, as its edges are far enough apart to prevent their healing together, as is the tendency when the single vertical snip is made. In the extreme cases of eversion, in addition to the measures already outlined, I have found Ziegler's method of cautery puncture of the conjunctiva and tarsus of great value. If the entire lid is everted, a row of cautery punctures about 4 mm. apart will have to be made. If only the inner half of the lid is everted, two or three punctures in the everted portion of the lid will suffice.

CICATRICIAL TRACHOMA

In Colorado we are fortunate in having little trachoma to deal with, but we do have some. The cicatricial forms are just as bad with us as elsewhere, or worse. This may be because our bright sunshine and dust cause the patient great discomfort. Once pannus and recurring corneal ulceration have begun, it is only a matter of time until the patient is almost blind. If anything can be done to cause the pannus to disappear the corneal ulceration will stop, and it is surprising to what an extent these corneas will clear. Even though the corneas are hopelessly damaged, the photophobia and general ocular irritation will be so improved that the patient is comfortable and most thankful. Plastic lid surgery has its place in bringing about this result, but, above all, it seems to me that the diseased tarsus must be excised.

I believe that Kuhnt was right when he said, "The excision of the tarsus is the last word in the management of cicatricial trachoma." The operation, as performed by Kuhnt, Wood and others, is a most formidable procedure because of the sutures. The patient is rendered very uncomfortable for a week or longer, and the removal of the sutures is often difficult. It is a hospital operation because a general anesthetic is necessary.

Some years ago, I saw L. Webster Fox perform an excision of the tarsus, using no sutures. It was so simple that I went home and tried it, and since then I have never used a suture after excising the tarsus. Instead of a hospital operation, it becomes a simple office operation and is performed as follows: A 2 per cent. solution of procain (novocain) is injected through the skin of the upper lid into the tissues overlying the tarsus at the inner, outer and middle portions. The lid margin is then grasped with a pair of tenaculum forceps and everted over a horn spatula, and more of the same anesthetic is injected into the conjunctiva and tarsus in a few places. To control bleeding, the lid is pulled tight over the spatula. An incision with a knife is made through the conjunctiva and tarsus parallel to the lid border; and about 2 mm. from it, another incision is made at the upper margin of the tarsus. The outer angle of this island of tarsus is picked up with forceps and the tarsus dissected away with curved scissors. One or two arteries spurt a little, but are easily controlled by torsion. The operation is over. The lid is turned back into position. Hot applications are made until all bleeding has ceased. The eye is filled with an ointment of mercuric chlorid and petrolatum and bandaged, and the patient is sent home.

I usually do one eye at a time. The next day the eye is dressed and not closed after that. The patient walks away with the eye open and is no more inconvenienced than before the operation. In a few days the lid is everted to see if exuberant granulations are forming. If so, they are snipped off or cauterized with a silver stick. In three weeks the lid has healed. It is smooth, and the old diseased tarsus which has played so conspicuous a part in causing the corneal disturbance is gone forever. I used to dread to see patients with cicatricial trachoma come into my office or my clinic. I now rather enjoy their coming, for I feel that I have something to offer that will bring results that are sure and swift.

ABSTRACT OF DISCUSSION

Dr. J. Sheldon Clark, Freeport, Ill.: Clamps and other instruments used for holding the lid after it is everted may be discarded for an instrument designed by Stanculeanu of Bucharest. It is something like a lid retractor. The lip of the retractor is cut off, leaving a straight edge that permits one to hook up the lid and evert it. The instrument is put in from above, the lid is everted over the elevator and then is held up in position while proceeding with the operation. It controls the bleeding very nicely, causes no pain and is very satisfactory.

Dr. Oliver Tydings, Chicago: About fifteen or sixteen years ago a man, about 40 years of age, came to me to be refracted. I noted the blepharitis marginalis, and suggested that he be treated. He refused treatment. Five years afterward he came back because he had reached the age of presbyopia and wanted another pair of glasses. He also consented to have his lids treated. The treatment, which consisted of massage, extended over a period of about eighteen months.

Massage was given two or three times a week at first and then at longer intervals, all the follicles were expressed, and then the margin of the lid was painted. Massage, the application of about 15 per cent. of silver nitrate, and the use of yellow mercuric oxid and mercuric chlorid ointment resulted in a good recovery. I have never seen a case that could not be improved. I do not think that there is any relation between refraction and blepharitis marginalis.

Capt. H. B. Lemere, Camp Mead, Omaha: I have used the procedure Dr. Black recommends in trachoma and I can corroborate everything he says about the operation. I modified the operation slightly. I use a lid clamp. By dissecting one end of the tarsus at a time and then moving the lid clamp on to the other end, I can do the operation practically without any blood obscuring the field. The operation can be done quickly and the patient is an ambulatory case.

A REGISTRATION FEE FOR PHYSICIANS *

FRANCIS W. SHEPARDSON
Director of the Department of Registration and Education
SPRINGFIELD, ILL.

At a committee meeting held in connection with the Illinois State Medical Society in Springfield, a prominent member of the society made a speech in violent opposition to a proposal for an annual state registration fee for physicians. His main argument was that medicine, being the oldest and most honorable of the professions, was in a class by itself, and that it was entirely beyond reason to think that the physicians could ever be grouped for registration purposes with architects and barbers, blacksmiths and plumbers, dentists and druggists, structural engineers and veterinary surgeons, all, of course, so he implied, far beneath the physicians in dignity and honor. He was exactly like one who would magnify the "noblesse" and forget the "oblige"; who would stand unmoved when the things he was pledged to defend to the death were insolently attacked. And that is the text for what follows:

The Civil Administrative Code of Illinois specifically provides that the officers of the Department of Registration and Education, under whose jurisdiction the administration of the Medical Practice Act comes, shall be neutrals. The exact language is:

> The Director of Registration and Education, the Assistant Director, and the Superintendent of Registration shall not be affiliated with any college or school of medicine, pharmacy, dentistry, nursing, optometry, embalming, barbering, veterinary medicine and surgery, architecture or structural engineering, either as a teacher, officer or stockholder, nor shall they hold license or certificate to exercise or practice any of the professions, trades or occupations regulated.

The officers of the department approached the work of enforcing the Medical Practice Act without any bias, but, confessedly, with something of the accustomed reverence for medicine as a great and honorable calling, represented by men of far more than ordinary professional ideals. They expected to find a medical nobility, with a lively appreciation of its obligation to protect its honor. They confidently looked to find the drawn sword and the defending shield bearing the significant words, "No one attacks our profession with impunity."

But this is what they actually found, during a year's experience and study:

DISCOURAGING ELEMENTS IN ILLINOIS MEDICAL SITUATION

They found a poorly organized profession, with less than half of its members associated in its state society, and with no clearly outstanding champions ready to tilt their lances against foes of medical honor. The *Bushido* ideals of the sometimes despised Japanese were nowhere in evidence. The unity and professional spirit of other crafts, often ridiculed by physicians as of far lower social standing, were entirely lacking.

They found an army of advertising charlatans, some with fixed offices and others appearing "for one day only," making extravagant claims of curative skill in handling all diseases, specialists in everything, blatant fakers, robbing the poor and the ignorant, preying on the superstitions of gullible foreigners, as bold and daring bandits as ever sandbagged a lone wayfarer at night; and yet unattacked in any effective way by the plumed knights of medical chivalry, but permitted to continue in shameful practices that would not be tolerated for a day by representatives of other professions and trades counted far inferior to medicine.

They found a motley array of so-called "doctors," of every name and cult under the sun; regulars, homeopaths, eclectics, osteopaths, chiropractors, napropaths, spondylotherapaths, mechanotherapaths, neurotherapaths, electrotherapaths, hydrotherapaths, suggestive therapaths, psycotherapaths, naturotherapaths, iridologists, magnetic healers, religious healers, and many other varieties, the list forcibly reminding one of the description which Masson gives in his "Life of Milton" of the sects which flourished in England in the poet's time. After naming a great many, he includes in a sweeping classification the remainder of the some hundred-odd varieties of "fluent, rancorous, inquisitorial and on the whole nasty kinds of Christians." Even such a comprehensive description would hardly include all of the so-called medical practitioners of Illinois, nor would it cover the radicals who oppose all regulation, claiming for the people "the inherent right to choose any sort of a doctor they please, even to 'dope' doctors or Christian science if they want it."

They found chains of doctors' offices, managed by real estate agents or other nonpractitioners and attended by licensed physicians who were paid from $8 a week to $35, with a possible commission of 10 per cent. on all gross business over $500 a week; the manager getting all the receipts, paying rent, furnishing light and providing equipment; the physicians being paid off like barbers or other hired hands on a Saturday night; the offices using common literature, apparently printed by the ton, distributed by hand in mail boxes and front yards, and bearing the name of the doctor nearest the region of distribution, who for himself was unable to read the circular in the language used, and so knew nothing of the glowing promises made to his prospective patients.

They found many doctors alleged to be abortionists, who, when questioned about the wholesale murder of unborn babes, took refuge in assertions of the guilt of all the craft, and claimed that if, in any company of members of the profession, the ancient invitation were renewed, "Let him who is without sin among you cast the first stone," as in the days of old so now, within a short time, no man would be left except the accused and the judge.

They found doctors, all over the state, who were guilty of unethical practices, who were known to be quacks of the worst type, and against whom sufficient evidence could not be secured to convict because of the unwillingness of reputable physicians to give testimony or to encourage deluded victims to give to the department for legal use information given to them in quiet hours of confession.

They found men and women in many places in Illinois practicing medicine without license and defying the provisions of the Medical Practice Act. But they could not secure convictions because regularly licensed practitioners refused to aid, because state's attorneys declined to enforce the laws, and because county medical societies have been too weak or too fearful to demand that such prosecuting officers perform their sworn duty, or too little interested to help in creating public sentiment in support of law and decency.

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* Read before the Madison County Medical Society at Alton, Ill., Aug. 2, 1918.

The plain, unvarnished, easily supported truth is this: There are more fakers and charlatans in medicine than in all other professions and trades put together. There are more irregular, improper, indecent and immoral things connected with medicine than with all the rest. There is less real reason, so far as conditions in Illinois are concerned, for medicine to claim nobility and plume itself because of its high estate than there is for almost any occupation followed in the commonwealth by the sons of men. There seems to be no medical nobility which feels any obligation. There seems to be no champion, either individual or corporate, that is quick to resent attacks on edical honor. With one exception, not a county ical society in all Illinois has given to the Depart- t of Registration and Education during its first administrative year that hearty cooperation, that united and determined support which is so desirable if its attempts to enforce the Medical Practice Act are to be successful. The exception was the society in St. Clair County, where, as the result of shameful riots which stirred the entire United States, the social forces desirous of the maintenance of law and order were encouraged to express themselves in demands for a general clean up. In this process the department was able to secure in that county ninety-three convictions for violations of various statutes, eight being infringements of the Medical Practice Act. Sixteen cases are still pending. Among the individuals convicted was the notorious Vizgird of East St. Louis who vainly tried to escape the officers of the department and the penalties of Illinois laws by seeking a hiding place in Missouri, but was caught in his old haunts one evening and given his deserts by the court.

Perhaps this is enough of the discouraging side of the Illinois medical situation. But the need of cooperative effort on the part of all interested in better conditions is great. This is a most favorable time for advance movements. The mobilization of our army has emphasized the importance of discipline and respect for authority. The rejection of so many men as unfit to fight for their country has led to much serious thinking on the part of the people. Certain forms of disease have been studied in an entirely new light. The potential soldier who has barred the door of his admission to the Army by venereal disease, contracted by cohabitation with prostitutes, is looked on almost with the scorn that attends the slacker or the traitor. He who has weakened his fighting strength by excess in the use of intoxicating liquor finds the hand of every man against him. Sobermindedness, clean living, unimpaired efficiency are demanded everywhere. The individual who, in any way, contributes toward the restriction of the output of American man power in this critical hour of world conflict has no influence, no political pull, no effective support anywhere. It is the time for the friends of medicine to strike and to strike hard against those of its adherents who drag its honor in the dust. The fact that so many honorable physicians have gone to war, and that so many communities are left to the mercy of the irregular, unethical or illegal practitioner lends added importance to the situation now faced.

PROGRESS IN MEDICAL EDUCATION

Considerable progress has been made in the direction of improved conditions in education. A few years ago Illinois had fourteen medical schools, some of them so poor in quality that a great historic survey declared Illinois to be the plague spot of medical education in America. The finger of scorn was pointed toward Chicago by every one connected with the profession. Now there are but five medical colleges recognized as in "good standing." Each of these five colleges has been visited and inspected by the department during the year, one of them twice. The student records have been searched with care by a special representative of the department. Where irregularities or improper methods have been discovered, the facts have been called to the attention of the officials of the institution affected, and prompt promises of rectification have been made. New rules and regulations connected with the Medical Practice Act have been established and put in force, after a conference participated in by the administrative officials of the department, by the members of the Medical Examining Committee, and by the deans and secretaries of the five schools. Each of the five institutions, through the proper official, has indicated in writing its intention to abide by these regulations thus agreed to. One of these new rules raises the minimal entrance requirement to two premedical years. Future licensees in medicine in Illinois, before being eligible for examination, must have had preparation for active practice represented by four years of high school, two years of college premedical instruction, four years in a medical school and one year's internship in a recognized hospital. Another new regulation provides that each student, at the time of his admission to a medica school, must present a qualifying certificate, issued by the Department of Registration and Education, certifying that all requirements for preliminary educatio have been met. It is believed that this provision wil end forever the most troublesome feature connecte with the regulation of medical schools, namely, th admission of inadequately prepared students, either o conditions or on defective certificates.

Attempts are being made through mandamus pro ceedings to secure the restoration to "good standing of two medical colleges, namely, the Jenner Medica College and the Chicago Hospital College of Medicin institutions which had been declared by the stat board of health to be no longer "in good standing with the licensing authorities of the state. A larg amount of time and attention has been given to th consideration of these petitions. The institutions wer reinspected, one of them twice. Several meetings fo conference were held, attended by representatives the department, administrative and professional, ar by those interested in the colleges. In one of thes conferences, representatives of the office of th Surgeon-General of the United States Army partic pated. It was gratifying to find that their judgme was the same as that given with entire unanimity by th representatives of the state of Illinois, namely, that th institutions should not be recognized. Whether t courts will force an action contrary to the best wisdo of those entrusted with safeguarding the interests the people remains to be seen.

EXAMINATIONS FOR LICENSURE

Examinations for licensure in Illinois are better conducted now than ever before. The Civil Administrative Code provides carefully for the safeguarding of this door of entrance to the medical profession through a committee of five persons, all of whom shall be reputable physicians licensed to practice medicine and surgery in this state, no one of whom shall be an officer, trustee, instructor or stockholder or otherwise interested, directly or indirectly, in any medical college or medical institution. For the purpose of preparing questions and rating papers on practice peculiar to any school, graduates of which may be candidates for registration or license, the director may designate additional examiners whenever occasion may require.

In the March examination a new feature was introduced in the form of a practical test, consisting of one hour with patients in eye, ear, nose and throat; one hour with surgical patients; one hour with diagnosis and medical patients, and one hour in the laboratory identifying slides. Through the courtesy of the officials of the Cook County Hospital, the facilities of that great institution were placed at the disposal of the department. Both examiners and examined entered into the spirit of the new arrangement with hearty interest. The results of the experiment were so gratifying that it was decided to make this a permanent feature of the examination plan. In the June examination the same method was followed, with an unusually large class of candidates, the results again being satisfactory in every way. It has also been determined that no license by reciprocity shall issue hereafter, except after the presence of the candidate before the examination committee and the passing of a satisfactory practical test.

These two advanced movements have placed Illinois in the forefront, since the practical examination for licensure has not made much headway in America. The members of the examining committee have determined to make the entrance into the profession more difficult by closer scrutiny of the written and oral reports of the candidates. They share with other representatives of the department in the earnest desire to make the Illinois license in medicine most honored of all state licenses because most carefully guarded.

REGULATION OF PRACTITIONERS

With conditions in the recognized medical schools more satisfactory than ever, and with the examinations for licensure greatly improved, the next important task of the department is the regulation of practitioners within the state. But here it is beset with many obstacles. Its two principal weapons for warfare are the Civil Administrative Code and the Medical Practice Act. The first confers on it far greater powers than were enjoyed by the former state board of health. The second goes far ahead of any statute heretofore adopted for regulating medicine. Its provisions correct many of the weaknesses of previous statutes. Under it, it is now possible to revoke licenses issued under any preceding practice act, whereas the law which it superseded was powerless over some practitioners. The act also gives larger range in the matter of revocation of licenses, the following nine types of offender being indicated:

1. A person who has been convicted of the practice of criminal abortion.
2. A person who has by false or fraudulent representation obtained or sought to obtain practice in his profession.
3. A person who is a habitual drunkard, or habitually addicted to the use of morphin, opium, cocain or other drugs having a similar effect.
4. A person who has by false or fraudulent representation of his profession obtained or sought to obtain money or any other thing of value.
5. A person who has advertised under a name other than his own.
6. A person who shall advertise or profess publicly to treat human ailments under a system or school of treatment or practice other than that for which he holds a license.
7. A person who has been committed, by the judgment of a court of competent jurisdiction, to a hospital for the insane.
8. A person who is guilty of any wilful violation of the rules and regulations of the Department of Registration and Education governing examinations, or who is guilty of any fraud or deceit by which he was admitted to practice.
9. A person who has been guilty of any other unprofessional or dishonorable conduct.

It will be noted, however, that these provisions have their limitations. For example, the rumor that a physician is guilty of abortion is not sufficient ground on which a license may be revoked. Even the dying declaration of a victim is not adequate. The law provides that the accused shall be convicted, and the presumption is that this means convicted in a court of justice. In like manner, if a practitioner has become insane, the law does not cover his case unless he is actually committed to an asylum. In a recent hearing of the department in Chicago at which some forty reputedly unethical practitioners were summoned, three of these on examination showed clear evidences of insanity, and that, too, to the satisfaction of all the representatives of the department present. But the law does not cover their cases, and they will continue their practice until, by reason of some violent outburst, they at last find their way to the sanatorium where they should now be incarcerated.

The cause set forth in the ninth paragraph covering general unethical and unprofessional conduct has not been considered by legal authorities as in itself sufficiently definite to warrant a revocation of license, although it may well be used in supplement to other charges.

While there are some defects in the law as it is, yet, as has been stated, it is far ahead of anything the state has yet had. The act applies to two classes of citizens: one, the individual who, not being regularly qualified by proper licensure, as provided for in the law, attempts to practice medicine; the other, the practitioner who has been regularly licensed. It might be taken for granted by every one that an untrained individual of the first class should be prohibited from practicing medicine. As a matter of fact, however, in a number of cases in which the evidence has been conclusive, the department has been unable to secure conviction because of the attitude taken by prosecuting officers, some of whom have actually attempted to explain their failure to enforce the law by statements that the provisions of the law are foolish or should never have been enacted. A notable instance of this kind occurred in one county where a retired farmer of considerable wealth and social prominence was known to be treating human ailments at the county seat as a chiropractor, although he had no license whatever so to do. The state's attorney, while not absolutely declining to prosecute, made all sorts of excuses for not doing so, saying that he was too busy with other matters to take up this particular question; so the department was powerless. The folly of such a condition was soon shown, however, by the verdict of the coroner's jury in a certain case in which it was declared that the death of a child had been brought about because of the improper practice of this particular man and another with whom he was closely associated and who likewise was not prosecuted as he should have been.

Another case not unlike this was reported from southern Illinois. An inspector for the department filed an information in the court against a noted chiropractor. The state's attorney of the county delayed action and later wrote a letter to one of the state officials asking him to go to the Department of Registration and Education and induce its officers, if possible, to withdraw the information, when its sworn duty is to follow up the offense with prosecution. It is needless to say that the department declined to take the action requested and that the case is still pending. Many other cases of a similar nature might be mentioned.

The department believes, however, that if it had the hearty backing of all regularly licensed physicians —and with that would come a sufficient public opinion to force all prosecutors to act—it would be able to make notable advances in clearing the state of unlicensed practitioners within a relatively few months.

But the Medical Practice Act was designed in the main for those who have been licensed through the regular processes. There is no doubt that its spirit contemplates that the business of the profession shall be carried on in an ethical manner. It does not reach those who use flamboyant advertisements proclaiming their great skill, but it does give power enough to require the advertiser to keep within the bounds of possibilities so far as his promises to his prospective patients are concerned. It does not reach the itinerant physician who practices in hotels in various places "for one day only," but it does have power enough to require him to register his license in every county where he practices and to restrict to some degree his advertised pretentions. When the itinerant is unlicensed, the law may be readily invoked. A case in point is that of the well-known Rev. Dr. Hawkins who has visited many places in Illinois in recent years. Not long ago he came to Springfield. Inspectors from the department called on him, one of them for physical examination and treatment. When the latter found that the gentleman who tried to use the cloak of religion as a shield to his illegal practice simply rubbed his hands over his victim's body, speaking practically meaningless words as he did so, he swore out a warrant for the arrest of the faker and had the satisfaction of seeing him placed in the Sangamon County jail, where he spent several unhappy days, part of the time as a result of being charged with working a confidence game. However, between 9 and 11:30 o'clock in the morning on which he was arrested, the reverend gentleman had been successful enough in his practice to secure fees of more than $300. This would have been a fair morning's work had he not had the misfortune to be caught by the officers of the law and consequently faced with the probability of being compelled to pay a large fine.

NEED OF ANNUAL REGISTRATION

The department needs another administrative aid, an annual registration, in order that it may be able better to serve the interests of the people and at the same time to protect those rightfully entitled to the honors and the emoluments of the medical profession.

The records show that, under the first medical practice act of 1877, 18,626 individuals were licensed—16,905 by the presentation of diploma, 1,236 by years of practice, and 485 by diploma and supplementary examination. Under the acts since 1899, there have been licensed by examination and by reciprocity 11,310, making a grand total of 29,936. How many of these licenses are active at the present time, nobody knows. The department has no check on them, as it has on licentiates in other lines by means of an annual registration requirement. In 1916 the American Medical Association made a computation which placed the number of living physicians in Illinois at 11,600. Counting for deaths and removals, and estimating additions by examinations, there probably are about 12,000 at the present time who hold Illinois licenses. Ignorance on this vital matter of administration places the department under a great handicap. It does not have any means of knowing where its licentiates are or what they are doing. It receives a daily press-clipping service which helps to some degree in checking deaths and removals. But its inspectors find impostors who are using the licenses of honorable practitioners long since dead; impostors who secured their licenses through fraud; charlatans who are claiming to be authorized representatives of patriotic physicians who are "over there" ministering to the wounded and dying among our soldier boys on the far-flung battle line; men long retired from active practice who are using their medical licenses in forwarding unworthy commercial enterprises; men who have abandoned all notion of reputable practice almost from the start of their professional career; fakers, quacks, irregular, illegal, immoral, unethical, untrained men, who grow rich on gullible humanity and trail in the dust and the dirt the banner of one of the great professions. To be asked to enforce a medical practice act, without having the machinery for ascertaining who is entitled to its privileges and who is ignoring its restrictions, at best is a difficult situation. The advantages of an annual registration on the payment of a nominal fee as an effective weapon for protecting the profession and for aiding in the prosecution of pretenders and offenders have been proved beyond question in connection with many professions, trades and occupations. It is surprising that the medical profession, which has needed such a bit of administrative machinery so greatly, has not availed itself of it, although it has been successfully used by others.

ADVANTAGES OF ANNUAL REGISTRATION

No greater help could be furnished the department in its administration than an annual registration of physicians. The argument for it, in brief, is this:

1. It would enable the department to keep in touch with legal practitioners. As has already been said, under present conditions the department has no definite knowledge concerning the number of medical practitioners in Illinois. When an individual has passed the required examination and has received a license to practice, he goes his way so far as the state is concerned, and possibly is never heard of again unless he is arrested for wrong doing or corresponds with the department for some special reason of his own.

2. It would be a great aid in keeping a correct roster of addresses. As it is, the American Medical Directory, published biennially, is a directory through which an attempt is made to indicate the location of every physician in the country, Illinois being included in the classification. Deaths, removals and withdrawals from active practice make this volume out of date before a new edition can be prepared. There is published annually in Chicago a volume bearing the title "Chicago Medical Directory," but this is more or less of a commercial proposition, and its lists of practitioners are sometimes defective. The state board of health, from time to time, was accustomed to prepare a list of regularly licensed practitioners, but this was confessedly faulty also. The importance of having as correct a list as possible of those who are entitled to the privileges of the Medical Practice Act needs no argument. With such a list available, department officers are able to state at once whether an individual is licensed or not.

3. It would enable the department to discover cases of individuals using the licenses of others who have died or have left the state, or from whom certificates may have been stolen or purchased. While such instances, under present arrangements, are brought to light only by accident, if there were an annual registration required, they would be quickly discovered.

4. It would enable the department better to control some of the unethical practitioners whose actions bring discredit on the profession. The occasion for the annual registration renewal would afford opportunity to the Medical Examining Committee and the officers of the department to consider whether on the whole it was desirable to permit the continuance of such an individual in the practice of his profession. There is no doubt at all that this annual review of methods pursued by a relatively small number of unethical physicians would be a powerful policing agency.

5. The annual registration fee of, say, $2, would furnish funds for the activities of the department at slight cost to the individual physician. It should be kept in mind that the larger part of the appropriation made to the department by the legislature is in the nature of a reappropriation of fees paid into the treasury through the department by members of various professions, trades and occupations. This money is used for the maintenance of the office staff, which includes the inspectors on whose shoulders falls the burden of making investigations throughout the state. The larger the amount of these fees the more effective the department can be in its administration, because better supplied with a working force. It may be worth while to note that the annual renewal fee for structural engineers and for master plumbers is $10; for architects, $5; for chiropodists, $2; for registered pharmacists, $1.50; for barbers, embalmers, horseshoers, assistant pharmacists and journeymen plumbers, $1, and for dentists, $1 paid biennially.

6. The willing payment of such a relatively small amount would provide an effective argument against the imposition of a larger annual state license fee, easily possible in these days of regulation when governments are seeking everywhere for increased opportunities for raising needed funds.

7. It is strictly in line with the best practice in other professions which, in nearly all of the states of the Union, have long been accustomed to the registration plan for the protection of their members and for the general interests of their special occupation.

8. This fee is favored at the present time by many of the leaders of the medical profession throughout the country who realize the pressing importance of thorough supervision of those who claim the privileges of the physician.

OBJECTIONS

Only two objections have been made to the proposition as it has been discussed with many prominent persons. One has already been sufficiently considered, namely, the alleged superior dignity of the medical profession when compared with others. As a disinterested layman, it is my frank opinion, for the reasons already set forth, that there is absolutely no basis, except possibly a historical one, for any such pretentions.

The other objection is one of inconvenience of having each year to send a small check in response to an official notice from the Department of Registration and Education. The one who first stated that objection to me wore on his coat lapel a jeweled emblem which indicated that probably he was a member of at least four branches of a certain fraternal order. If the methods of these bodies are those usually followed, he cheerfully pays at four different times a year a relatively small amount in the shape of dues in order to keep himself in "good standing." To any one sincerely interested in the welfare of medical practice in the state of Illinois, such an objection carries little weight.

CONCLUSION

The department attempted, during its first year of existence, to enforce the Medical Practice Act to the best of its ability. Its officers are confident that if it could have the additional machinery which would be furnished by the inclusion of an annual registration provision in the law, it would be able to render greater assistance to the profession which the county society represents. We ask the earnest aid of the members of county medical societies throughout the state in securing this desired movement. The irregular, illegal and unethical will oppose it. It is those who stand for the better things of life, who have pride in the profession they practice, who are quick to resent imputations against its honor, to whom the department must look for the cooperation which will bring to it the one bit of administrative machinery which it now lacks in order to do what the Medical Practice Act clearly intends should be done.

An Objection to Dried Milk in Infant Feeding.—The Cheshire (England) Local Medical and Panel Committee in a letter to the president of the Local Government Board objects to the Board's unqualified approval of dried milk in infant feeding as follows: "The Local Government Board leaflet, "Dried Milk for Infants," dated March, this year, states: "Experience during the last twelve or fourteen years shows that dried milk is one of the most satisfactory forms of cow's milk for use in the feeding of infants." That is a most misleading statement. The very large and carefully recorded experience of the Manchaster Children's Hospital on the relative sickness incidence in breast-fed babies, babies fed on cow's milk, and babies fed on dried milk, shows that while breast-fed babies suffer least, babies fed on dried milk have a far higher sickness rate than those fed on fresh milk. Dr. Ashby, physician to the Manchester Children's Hospital, writes on June 11, 1918: "I have no hesitation in saying that I have found cow's milk superior to any dried milk or artificial food in my work with infants and young children at Manchester and Salford."

INTESTINAL OBSTRUCTION

CONTINUED STUDIES *

H. B. EISBERG, M.D.
AND
J. W. DRAPER, M.D.
NEW YORK

Additional evidence is accumulating that death caused by intestinal obstruction is due to toxins originating in the epithelium of the duodenum and its appendages. Duodenal transplantation is, therefore, a satisfactory method for the experimental study of the cause of death in obstruction.

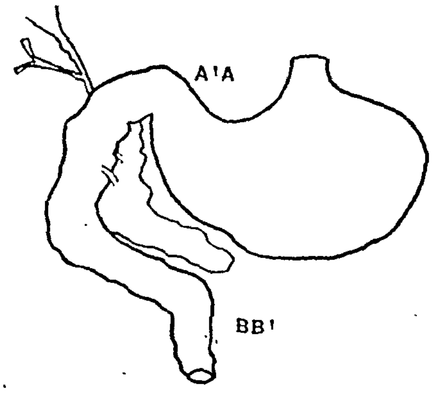

Fig. 1.—*A'A-BB'*, duodenum with its outbuds, the pancreas and liver.

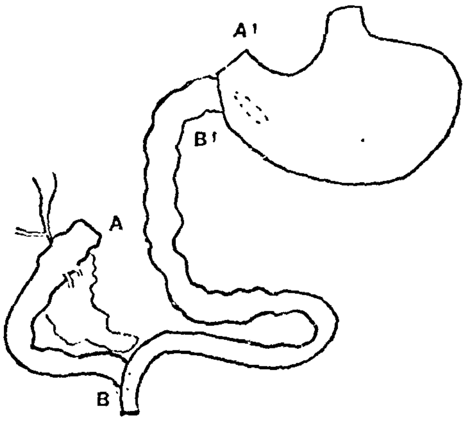

Fig. 2.—*A'*, oral occluded pylorus; *B'*, aboral jejunum anastomosed to stomach; *A*, aboral occluded pylorus; *B*, oral jejunum anastomosed to ileojejunum.

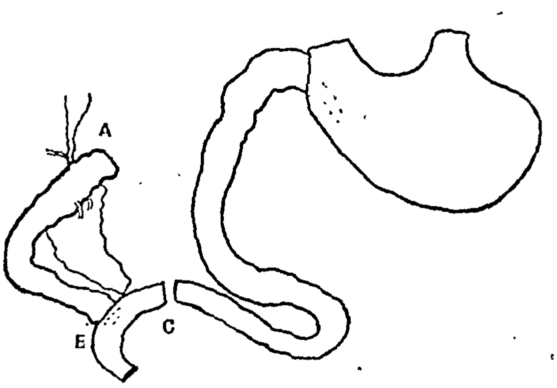

Fig. 3.—Same as Figure 2 with an obstruction.

Rogeré, and *more recently* Whipple and his associates, have laid special emphasis on a proteose from the duodenal region. Sweet and his associates have laid special stress on the pancreas. Dragstedt, Moorhead and Burcky, on the other hand, again take up the bacterial origin of this toxemia.

Our continuation of the study of this interesting problem has centered on three phases — transplantation, proteose isolation and obstruction ratio.

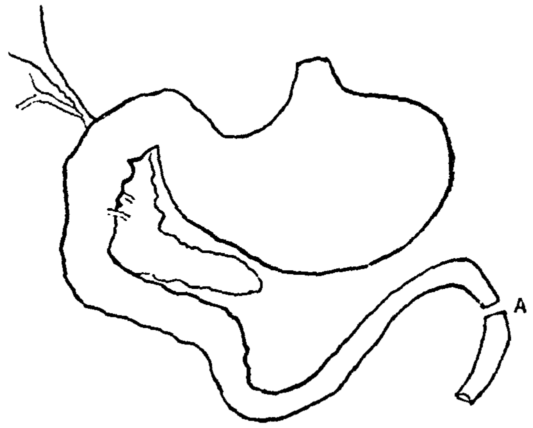

Fig. 4.—*A*, obstruction at ileojejunum corresponding to obstruction at *C*, Figure 3.

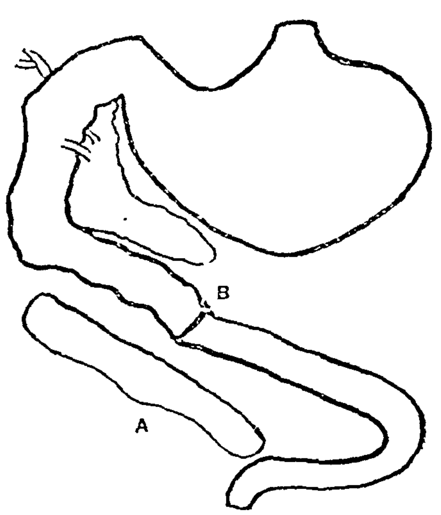

Fig. 5.—*A*, occluded loop; *B*, reconstructed alimentary canal.

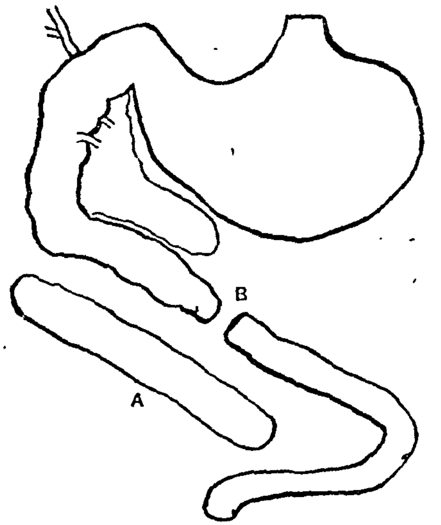

Fig. 6.—*A*, occluded loop; *B*, obstruction of alimentary canal.

DUODENAL TRANSPLANTATION

The entire duodenum with its outbuds, the pancreas and liver, are first separated from the alimentary canal (Fig. 1). The pyloric end of the segment and the stomach are occluded, the duodenum is anastomosed to the ileojejunum, and posterior gastrojejunostomy is performed (Fig. 2). This constitutes the primary operation. From two to three weeks after, obstruction by section and infolding, 35 cm. aboral to gastrojejunostomy was produced (Figs. 3 and 7). This corresponds in position to the duodenojejunal obstruction as shown in the control (Fig. 4).

The results were as follows: Dogs operated on as above lived seventeen days in *comparison* with six days in the control animals and three days longer than after obstruction in any part of the small intestine except at the sphincter. Colonic obstruction caused death in fourteen days at the ileocecal sphincter, or in twenty-eight days if at the rectum. Moreover, and of great importance, is the fact that, clinically, duodenal transplantation prevented the occurrence of classical symptoms of duodenal obstruction such as *tachycardia, tremors and spasticity*, as described by one of us in the original report, in which it was pointed out that this condition closely simulated parathyroidectomy. After transplantation, the obstructed animal remained clinically normal for from seven to twelve days after operation. There was gradual increasing emaciation and occasional vomiting. The entire picture simulated that of rectal or esophageal obstruction with complete absence of all fulminating toxic symptoms.

The conclusion is that the *duodenum*, with its embryologic outbuds, furnishes the cause of death. If the jejunum creates a toxin it is certainly of low lethal grade.

PROTEOSE ISOLATION

In reference to the proteose of Rogeré and of Whipple, we have reported that we were unable to duplicate the experiments because of faulty chemical technic. Since then we have repeated Whipple's experiments and have caused death by the injection of the residue. Curiously enough, analysis of the charts showed that when fluid was obtained from blood loops, no reconstruction of the intestine having been done (Fig. 6), the intoxication was produced. If, however, end to end anastomosis or gastro-enterostomy (Fig. 5) were used to reconstruct the intestine continuity, the symptoms were either very slight or were absent.

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* From the Surgical Research Laboratory, New York University.

* Read before the Section on Gastro-Enterology and Proctology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918

To explain this phenomenon we offer Sweet's suggestion—that the toxic agent was formed in the duodenum but excreted into the occluded loop. This view is strongly supported by our observations after duodenal transplantation and also by the views of Dragstedt, Moorhead and Burcky, namely, that their animals with jejunal loops lived indefinitely if no rupture occurred, whereas, those with duodenal loops all died within from twenty-four to forty-eight hours, excluding those that died from rupture. Their interpretation, that bacteria are the sole cause of death in intestinal obstruction, we cannot harmonize with certain facts. First, the duodenum is virtually bacteria free, as compared with the terminal ileum and colon, as Halsted and Cushing, as well as Brown and Blake and one of the writers, proved many years ago. Second, closed segments of the terminal ileum and of the colon, regions where bacteria abound, are not incompatible with long life.

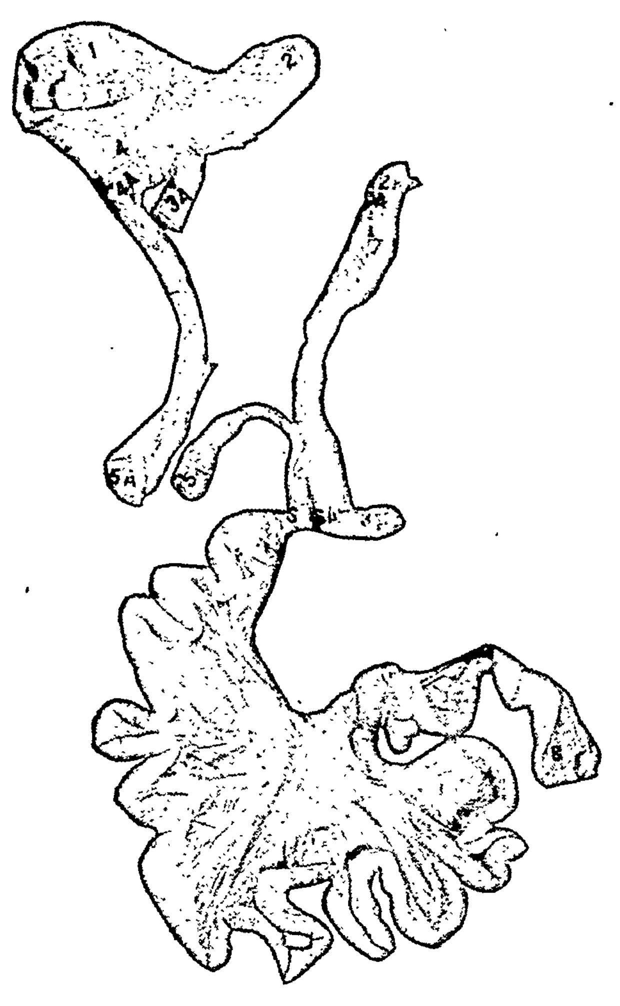

Fig. 7.—1, cardiac end of stomach; 2, pyloric end of stomach; 2 *A*, aboral pyloric end; 3, oral end of jejunum; 3 *A*, aboral end of jejunum; 4, 4 *A*, gastrojejunum; 5, 5 *A*, obstructed ileojejunum; 6, 6 *A*, duodenal jejunum anastomosis; 7, pancreas; 8, sigmoid.

TRUE LETHAL LINE OR POINT OF MAXIMUM OBSTRUCTIVE TOXICITY

Whatever the composition of the toxin of intestinal obstruction, which we believe to be of the same nature as the known endocrine secretions, partly because of the similarity of the symptoms after parathyroidectomy or duodenal obstruction, all observers have agreed that its most active manifestations occur following duodenal obstruction. There is a point in the second portion of the duodenum at which acute obstruction causes death more rapidly than elsewhere in the intestine. This point we have referred to as the true lethal line in distinction to the one which was described by one of us in relation to the twine triangular stitch for gastro-enterostomy and located some 20 cm. aboral to the true lethal line. Oral or aboral to this line there is a proportionate decrease of obstructive toxicity. While the exact ratio is not yet accurately worked out, one undoubtedly exists, and we have shown it roughly in Figure 8 to be approximately 1:4 in length of life, and 1:8 in length of intestine. These figures are arbitrary and may be shown by future work to be inexact; but the fact remains that there is a constant mathematical ratio that can be determined by further experiment. It may resemble the healing curve of Carrel. Lynch has suggested that there is normally some biochemical product brought down from above similar in nature to prosecretin. With this view we are in hearty accord.

SUMMARY

Duodenal transplantation definitely shows that the duodenum and its appendages, singly or collectively, produce the lethal agent which causes death in intestinal obstruction.

A proteose may be isolated under certain conditions. This will cause death if injected. Further definite corroboration, however, is necessary to prove that this test tube product is identical with the vital lethal product of acute obstruction.

A true lethal line or point of maximum obstructive toxicity exists in the second portion of the duodenum, oral and aboral to which, obstructive death occurs in a definite mathematical ratio.

The lethal agent is probably of biochemical origin similar to parathyroid or other endocrine secretions, interference with which causes death.

ABSTRACT OF DISCUSSION

Dr. Dwight Henderson Murray, Syracuse, N. Y.: A few years ago I heard a paper on this subject that gave us the information that the poisons produced in a closed loop of the intestine were many times stronger than phenol, morphin, strychnin and drugs of that kind. I should like to ask if any tests were made to determine the lethal dose of these poisons.

Dr. James J. Moorhead, Chicago: Did you occlude the duodenum with the pancreas attached?

Dr. Eisberg: It is occluded at the oral end, and the aboral end is united to the gut. A gastro-enterostomy is performed at either end; the secretions of the duodenum supposedly flow into the lower intestinal tract.

Dr. Moorhead: How long did those animals live?

Dr. Eisberg: Seventeen days; that is, after the secondary operation was produced by obstruction above this duodenal transplant; and that is about twelve days longer than the control animal by an obstruction placed at the same level with the duodenum inside. Our point is to show that the duodenum itself, and only the duodenum, with its outbuds, is the true cause of death from intestinal obstruction; and we do believe now that we have evidence it is not the duodenum alone, or the bile alone, or the pancreas alone, but the three working together, and special emphasis is laid on the fact.

Dr. James J. Moorhead, Chicago: As to the cause of death from intestinal obstruction, we are still of the opinion expressed in our recently published article, namely, that bacterial activity plus necrotic tissue, or the absorption of toxic products resulting from the action of putrefactive bacteria on necrotic tissue is the important factor. It is our intention in the near future to report results following complete extirpation of the duodenum.

Dr. Harry B. Eisberg, New York: As to the lethal dose of Whipple's proteose, we have been able to produce death within twelve hours with 150 mg. of the residue. The lethal dose, as far as the cause of death was concerned, depended, in part, on the individual animal. Some animals showed a greater immunity than others.

In reference to the origin of this toxic material, which is described by Whipple as a proteose, our evidence is as follows: It is a laboratory product obtained from occluded loops of the duodenum and jejunum. The important point is to remember the common origin of the duodenum, the liver and the pancreas. The lethal agent in true obstruction is a biochemical substance associated with the endocrine products arising from the epithelium of the duodenum and its outbuds, the liver and pancreas.

We agree with Dr. Moorhead that fat necrosis is a frequent and troublesome factor in any experimental work on the pancreas. His views regarding tissue necrosis as the cause of death in obstruction have been considered by ourselves and by others. Necrosis, except in occluded loops, plays no part in true obstructive death. If a loop is occluded with subsequent interference to its blood supply by distention, etc., and the intestinal canal is reconstructed, obviously there is no true obstruction. Death is then due to proteose intoxication arising from devitalization and autolysis of the intestine composing the loop. If not reconstructed there is a loop obstruction plus a true intestinal obstruction. This causes, in addition to the proteose, absorption of unidentified toxins oral to the point at which the loop was made. These toxins are due to endocrine disturbances of digestional epithelium.

Thus we see that there is a great difference between the death following an occluded loop with or without reconstruction of the canal and simple surgical obstruction by clamp or simple suture.

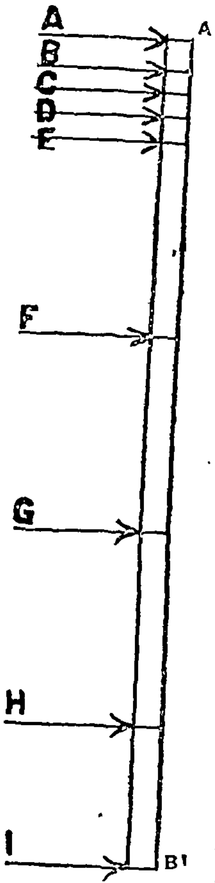

Fig. 8.—Length of life, 1:4. *A'*, seven days' esophageal obstruction, *B'*, twenty-eight days' rectal obstruction.

British Maternity and Child Welfare Act.—This act, as pointed out in a circular letter issued by Mr. Hayes Fisher, president of the local government board, enables local authorities to make such arrangements as may be sanctioned by the board for attending to the health of expectant and nursing mothers and of children under 5 not being educated in schools recognized by the board of education. As summarized in the *Medical Officer,* the local government board's grant has now been made available, among other things, for hospital treatment of children up to 5 years of age; lying-in homes; home helps; the provision of food for expectant and nursing mothers and for children under 5 years of age; crèches and day nurseries; convalescent homes; homes for children of widowed and deserted mothers, and for illegitimate children; experimental work for the health of expectant and nursing mothers and of infants and children under 5 years of age.

THE SILENT PROSTATE *

JAMES A. GARDNER, M.D.

BUFFALO

The seriousness of prostatic obstruction in old men has long been recognized by the profession. The education of the public with regard to the neglect of this condition has made rapid strides during recent years. If the insidious growth of the obstruction interferes with the bladder outlet, it causes residual urine. The onset is so very gradual that the symptoms vary. According to Kidd,[1] the onset may be divided into three clinical types. He sets these forth in such a concise form that I wish to use his classification:

1. *The Irritable Bladder Type.*—A man between 50 and 60, who develops an irritability of the bladder, finds it necessary to get up at night. This frequency increases until he notices that he is also voiding frequently during the day time. He finds that when the call for urination comes it is necessary to find a convenient place quickly. This condition increases until finally after a year or eighteen months he has complete retention.

2. *The Painful Retention Type.*—A man apparently in good health between 50 and 60 suddenly discovers that he is unable to pass his urine. After a few hours he is taken with painful cramps in the hypogastric region, and has an intense desire to pass his water, which he finds impossible, and he sends for a surgeon.

A dose of morphin and a hot bath are usually all that are required to relieve this attack. These attacks are repeated until he finally develops retention when it is necessary to catheterize. These attacks are painful because his bladder muscle is in good condition and able to undergo cramping contraction.

3. *The Painless Incontinence Type.*—This type, which I wish to emphasize in this paper, is pictured by the wasted old man whose digestive apparatus is upset, who has a continual thirst, drinking large quantities of water, and who finds it necessary to urinate every few minutes.

He is not able to control his urine, and often it dribbles away, soiling his clothes, and because of the offensive odor his presence is objectionable to other persons. Patients of this type frequently complain of backache.

When they are examined they are very much astonished to find that the cause of their trouble has been a full bladder. They felt that the bladder was empty because they were urinating every few minutes. This is the type of case in which a complete emptying of the bladder at the first catheterization may bring about very serious results.

The condition is due to complete painless atony of the bladder muscle, with retention and overflow, and the "lumbago" is caused by back pressure on the kidneys.

It has been demonstrated repeatedly that it is the shape and not the size that causes the obstruction. I have in my collection two most interesting specimens showing this condition.

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* Read before the Section on Genito-Urinary Diseases at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

[1] Kidd, F. S.: Urinary Surgery, p. 333.

One is from a man aged 83 who had 10 ounces of residual urine, and the other from a man aged 85 who had a pint of residual urine. Although the size of the second prostate was ten times the size of the first, the smaller obstruction caused just as much trouble as the larger one. In fact, the man with the larger prostate had been more comfortable, in that his prostate as it enlarged had not at first pushed in toward the urethra.

Some of these patients progress with their residual until the frequency of urination sends them to the physician. Others may continue with broken rest, frequency and straining, till wet feet and chilled skin bring on retention, when they must be catheterized for relief. They may, however, fall into the hands of a surgeon like the one who put himself on record in a recent journal, stating that he had never seen a ruptured bladder from overdistention, nor was there any record of such a case in the hospital in which he operated. He advised that nature be allowed to take care of the condition, completely overlooking the fact that the back pressure would injure the kidneys, and that the patient would die of "Bright's disease."

DANGER OF ENLARGED PROSTATE TO KIDNEYS

Urologists have endeavored for a number of years to impress on the profession that the danger from an enlarged prostate emanates from the injury caused by the back pressure.

As I have stated before, the majority of patients do not remember when the first symptoms began. Pain is more often absent than present during the first year and a half. Consequently the patient sees no need of consulting a physician. It is during this time that irreparable damage may occur to the bladder and kidneys.

If the bladder muscle is strong, it may develop cramps, the muscle resenting the overdistention. There may be pain in one or both kidney angles from back pressure. This should not be overlooked and considered "lumbago," as it is one of the very important symptoms.

Obstructions of the lower urinary tract give rise to early destructive changes in the kidneys. The kidney pathology is not the only thing that occurs, for there is the secondary cardiovascular and metabolic disorders, which are often of sufficient prominence to mislead the physician, and cause him to overlook entirely the real source of the trouble.

In a majority of patients presenting themselves for examination, we find that a urinary infection has already taken place. This may be confined to the bladder, but frequently the kidneys also have been infected. It has long been recognized that if a patient has a mild urinary infection and recovers from it he becomes immune to a certain extent. This has frequently been demonstrated by the exceptional patient who has been catheterizing himself for a long time, and who is held up as an example in the community of a man not requiring operation.

We know that 10 per cent. of patients leading a catheter life die from a general infection within two months. These patients, because of poor drainage, unfortunately are not able to withstand the onslaught of the bacteria. Crabtree and Cabot have shown that the patient with sterile urine after a few catheterizations develops colon bacillus pyelonephritis.[2] This infection need not necessarily be a contamination caused by catheterization, but may be through the blood stream.

As has been stated, the patient who has had a mild infection and becomes immune is a better operative risk. Recognizing the fact that all patients will have more or less infection following the cystotomy, whether by the suprapubic or peritoneal route, I have felt that if adequate drainage is provided, the severity of the infection may be better controlled. The effect of infection on the kidneys is a very definite one. The patient is irritable, restless, and usually complains of great weakness. The specific gravity of the urine drops, and the amount of secretion often becomes very scant. At this stage the phthalein test shows a very small output. Under vigorous elimination, the kidneys recover their equilibrium, and the patient improves.

In the past when the single operation was performed in prostatectomy, this infection added to the shock of the removal of the large prostate often was a sufficiently deciding factor to cause death, or to cause great anxiety as to the prognosis. Following this, as the importance of the preliminary treatment was duly recognized, frequent catheterizations improved the patients and the mortality decreased. Then the indwelling catheter was used, but many patients had such sensitive urethras, and the accompanying epididymitis occurred so frequently, that, although this seemed to be an improvement on frequent catheterization, yet it was not the ideal procedure.

SUCCESS OF THE TWO-STEP OPERATION

About this time, the two-step operation was evolved. Pilcher demonstrated that patients who are poor operative risks are able to weather the strain, when operated on by this method. His arguments interested me and I have since followed out the two-step method with a series of 112 cases without a death. In the one hundred and thirteenth case, the patient died of embolus fourteen days after operation.

The patient, No. 1390, aged 52, entered the hospital, March 8, 1918, having 15 ounces of residual urine. Examination revealed no enlargement of the prostate per rectum. Cystoscopic examination showed a small medium lobe. March 9, suprapubic cystotomy was performed under procain. March 13, the phthalein test showed 40 per cent. for the first period and 20 per cent. for the second period. March 14, under general anesthesia, the medium lobe was removed. Convalesence was uneventful. The patient was sitting up in a chair on the fifth day after operation. On the fourteenth day, after being up two hours and eating his lunch, he prepared to return to bed for the afternoon rest hour. While getting into bed, he became cyanotic and died within five minutes. He had not complained of pain, and a short time before had spoken of feeling so well that day.

Three quarters of the patients presenting themselves for operation have infected bladders, or if the bladder is sterile, the presence of the drainage tube will cause an infection. Again, if there should be a severe infection of the wound, the patient can stand it much better than if he had the added burden of a prostatectomy.

I believe that the surgical principles on which the operation is based are sound, and that the infection which is bound to occur may be cared for by free drainage with little risk to the patient. Aside from giving free drainage to the urine, we incidentally prepare the operative field by having the tract walled off by granulation tissue. It is not infrequent in these cases that there is so much congestion, that following a simple cystotomy, blood is present in the urine for the following three or four days, and in two cases it became necessary to pack the bladder to control the hemorrhage. Undoubtedly these patients would have died if, in addition to the cystotomy, the prostate had been removed.

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[2] Crabtree, E. G., and Cabot, Hugh: Colon Bacillus Pyelonephritis, The Journal A. M. A., Feb. 24, 1917, pp. 589-591.

Tumors which are large and succulent will in many instances decrease from one third to one half in size after drainage for one or two weeks, thus decreasing very materially the risk of hemorrhage following the second operation. With the two-step operation and the preparatory treatment we have not had the secondary hemorrhage which, following the single operation, has sometimes been fatal.

ETIOLOGY

Hypertrophy of the prostate is a misnomer. There have been extensive embryologic, histologic and gross studies by urologists to determine what this condition is, with a number of varying opinions. In a study made on this subject[3] based on 100 specimens we found that the enlargement was caused by an adenomatous growth. These adenomatous nodules were found in one patient as early as 38 years of age, and the others developed between the ages of 40 and 60. The growths are best demonstrated by the use of the lowest power lenses on the microscope, or a simple lens. The most convenient is the dissecting microscope. By this method, it is very easy to pick out these little nodules in a slide containing a cross section of the prostate. In the younger nodules, one is attracted by the round or oval, deeply stained nodule around which may be seen a thickening of the adjacent tissue. A little later the epithelium has proliferated and, when seen with the higher powers of the microscope, resembles the epithelium of the prostate. As the adenomatous growth enlarges, it pushes the prostatic tissue to one side, compressing it so that it has been called the prostatic capsule. As this mass grows, as has been stated in the foregoing, it is the shape, not the size, that causes the obstruction.

If the operation is performed by the suprapubic route, this mass is simply lifted out and does not interfere with the vesical sphincter, nor are the ejaculatory ducts injured. Neglect in properly interpreting various symptoms has caused mistakes in the diagnosis of prostatic obstructions. There are various conditions which may cause obstruction in a man between 55 and 60 years of age. These cases should be carefully studied to eliminate beginning of tabes, stricture of the urethra, diverticulum of the bladder, and growths, or stone of the bladder.

If a patient's reflexes are carefully tested, and a Wassermann test of the blood made, and if there is any question, tabes may be eliminated. Enlargement of the prostate is often mistaken for urethral stricture because the spasm causes an obstruction of the urethra. Diverticulum of the bladder may cause residual urine, and the symptoms of an obstructive prostate. Diverticulum is caused by an obstruction in the lower urinary tract, and often complicates the enlarged prostate. It is quite essential to make the diagnosis of diverticulum previous to operation, so that the patient may understand that this condition should be cleared up following his prostatectomy, since it is not wise to subject him to a long operation at one sitting. The cystoscope will, of course, clear up the presence of stone, tumors of the bladder, median bar or diverticulum.

Early obstruction in men between the ages of 45 and 50 causes us to think of malignancy of the prostate. It has been stated that 25 per cent. of all cases of enlarged prostates are malignant. The growth usually begins in the center and, since the capsule is dense, it is some time before it breaks through. It is therefore essential that operation should be early, if permanent relief is expected.

If a little care is given in the taking of history, an examination will easily demonstrate whether there is present a simple enlargement of the prostate or one of the other conditions obstructing the flow of urine. Diagnosis previous to operation is very essential in many of these weak old men so that the existing condition may be relieved with as little strain as possible on their reserve strength.

The patients who present themselves with clear urine free of pus, in which chemical examination shows a small amount of albumin, often mislead the physician into believing that there is a chronic nephritis. In many of these cases, following the preparatory treatment, the albumin is markedly diminished or clears up entirely, showing that it was caused by the temporary back pressure. The chemical and microscopic examination of the urine is important, but it does not demonstrate the kidney function. Though various tests for kidney functions have been advanced which are of more or less aid in deciding the quality of the surgical risk, I believe that in the phthalein test, Geraghty and Rowntree have given us the simplest and most satisfactory one.

OPERATIVE PROCEDURE

Our method is to have a functional test made when the patient first enters the hospital, and we are guided to a certain extent as to the time of performing the second operation by the improvement in this functional test. The patient who only excretes from 5 to 10 per cent. during the first seventy minutes is a poor operative risk. On the other hand, when they excrete from 40 to 50 per cent., we consider them good operative risks. This rule is not hard and fast, however, because we have operated successfully on patients who excreted but 10 per cent. during the first period of seventy minutes. The test is carried on for two periods of seventy minutes and fifty minutes respectively. The excretion is frequently slow, and the greater portion of the dye may be passed in the second period. The phthalein test is not used as the sole index to the surgical risk, but the general condition of the patient aids us in our conclusions. As the patient improves under elimination, sweat baths and bowel washes, and when the urine is scanty, by the forcing of fluids, his functional test also improves. Following the primary cystotomy, the functional test frequently makes a marked drop, and then after a day or so begins to rebound again, demonstrating the advantage of dividing the shock into two parts.

It has been our practice, the day after a patient enters the hospital to perform the primary suprapubic cystotomy under infiltration anesthesia with procain. The patient is given from one sixth to one third of a grain of pantopon (pantopium hydrochloricum) an hour before the operation. Because of the necessity of anesthetizing each layer, the primary operation occupies a longer time than if the patient was under general anesthesia. But the patient is not suffering from any shock, and we have a chance to prepare the tract for our second operation, taking care to open the bladder as high up as possible. At this time the prostate may be examined, and our cystoscopic findings checked up. A large mushroom catheter is placed in the suprapubic wound for drainage, and a purse string suture makes a tight joint. The fascia and skin are sewed up in layers. Two days after the operation, the patient is out of bed. These old men do not do well lying down. The psychologic side should be catered to, as they feel they have made progress because they are able to be up and around. The mornings are occupied with elimination treatment of baths and bowel washes, while during the afternoons the patient is up and walking. As the general condition improves, incidentally his phenolsulphonephthalein output is improved, and he is prepared for the second operation.

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[3] Gardner, J. A., and Simpson, B. F.: The Relation of Multiple Adenomata to the Etiology of the Enlargement of the Prostate Gland, Surg., Gynec. and Obst., 1914, **18**, 84-89.

At the time of the second operation, a general anesthesia of ten minutes suffices to stretch up the original opening and lift out the adenomatous prostate. The Hagner bag controls what little hemorrhage there is, and a large drainage tube of the Marion type is used in the suprapubic wound. The Hagner bag and the Marion tube are removed at the end of forty-eight hours. The bottle-pump designed by Bethune is then used. The wound is kept dry by this method and heals very rapidly. Usually after a week's use, the opening is so small that the catheter attached to the pump may be removed, and the wound heals spontaneously. An indwelling catheter placed in the urethra for a few days assists the final healing. The patient sits up in bed the second day and is permitted to get out of bed the following day. It requires from three to four weeks for the average suprapubic wound to heal.

I feel that one of the very important adjuncts to the treatment of these cases is the service of a good nurse, one who has been thoroughly trained in the care of these patients. They are able to do much to help them, both mentally and physically, and I feel that I am indebted to my nurses, to a great extent, for the good results that have been attained.

MORTALITY

An investigation recently made by Thomas,[4] of the operative reports of twenty-six representative general hospitals in Pennsylvania and the neighboring states, revealed the alarming statistics of 22.5 per cent. mortality as the result of 148 prostatectomies made during the year. Compare this, if you please, with the mortality rate of 4.33 per cent. for 1,375 prostatectomies by eight of the world's foremost genito-urinary surgeons.

H. H. Young has reported one series of 128 prostatectomies without a death, and I have completed a series of 112 unselected cases without a death. This very marked difference in statistics is caused, I think, by the attention to detail given by urologists.

ABSTRACT OF DISCUSSION

Dr. Herman L. Kretschmer, Chicago: I do not like the term Dr. Gardner uses, 'the silent prostate"; it is misleading. My experience with the so-called "silent prostate" was in the clinic of Zuckerkandl at Vienna. He repeatedly showed us patients that came in after being treated by the stomach specialists because of their gastric distress and various other ailments. These were cases that would naturally fall into this group. The prostatic picture, however, was in the background. If we will spend a little more time in getting good histories and eliciting the sequence of events with regard to the symptoms mentioned by these patients, the prostatic symptoms will overshadow the immediate symptoms of which the patients complain. The term "the silent prostate" should not be reserved for cases of benign hypertrophy. That term can also be used for cases of chronic infection in the prostate when the patients have neither urinary distress nor sexual symptoms, and in which the patients suffer from a number of complaints, such as arthritis, neuritis, etc., whereas in cases of benign hypertrophy the urinary symptoms always predominate. I was glad to hear Dr. Gardner say that he is not guided by his figures with regard to functional tests between the two stages. Functional tests should be made. They help out; they should be the most important part in determining when the second operation should be done. They are one of the links in the chain of evidence. The general condition of the patient, his appetite, whether or not he gains weight, the character of the urine, and whether the infection clears up, should all be taken into account. I quite agree that we should make these functional tests but we should not rely on them absolutely. My experience has been the same as his, that after the preliminary cystotomy there is a drop in the function, and afterward the function returns almost to normal.

Dr. James B. Cross, Buffalo: I would like to emphasize the importance of each step of the two-step operation. The principal dangers of prostatectomy from the mortality standpoint are shock, relief of back pressure and hemorrhage. Both shock and hemorrhage are much reduced by reduction in congestion of the prostate after the first step. In a large adenomatous prostate, where the middle lobe sticks up in the bladder, when you go in the second time, you find that the gland is reduced one-third to two-thirds in size. This certainly goes a long way toward reducing hemorrhage. Dr. Gardner is now using the Hagner bag. It never appealed to me that putting a rubber bag under pressure at these bleeding points was really good surgery. The results have been good, however. Dr. Kretschmer spoke of going on the general appearance as much or more than on functional tests in regard to the time of the second operation. I think that is very true. In a case I had last month the man picked up very rapidly after the first operation, but his function would not get over 20 per cent. for two hours. After ten days we gave him by rectal drip 12 ounces of Fischer's solution with 10 per cent. glucose, each twenty-four hours, without any difficulty. Three days later his functional test jumped to 28 per cent. We kept this up for ten days, then performed a second operation, without any ill results.

Another big feature in the statistics of nonmortality has been the specially trained nurses. In Buffalo we use female nurses entirely who are trained in wards before they are put on private cases. In order to provide a stimulus for them to take up this work, they are entitled to $35.00 a week in place of the $28.00 which the ordinary nurses get; and in that way we have a number of girls who are exceptionally good in this work.

Dr. J. Bellinger Barney, Boston: In reference to the Hagner bag, we have used it with good success. The bag has sometimes broken after the patient has been put to bed, and the tube was broken. In each instance, the bag ceased to perform the function for which it was designed and yet no alarming hemorrhage occurred. Sometimes during the removal of the bag the handle has come off. Were it not for the fact that a strong silk ligature was attached to the tube at its junction with the bag as well as to the handle its removal would be a matter of great difficulty.

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[4] Thomas, B. A.: The Significance of Specializing in Surgery with Reference Especially to Genito-Urinary Surgery, Pennsylvania Med. Jour., 1916, 20, 101.

As regards the introduction of the bag we find that unless the edges of the prostatic capsule are tucked down while the bag is being blown up it does not control the hemorrhage properly.

We have also had some experience with regard to the value of special nurses. Our male nurse looks after these prostates with the utmost care, and we consider that the good results we have had are due largely to this man's faithful and efficient attention to every minute detail.

We also have found that the perineal operation is of very great value, particularly in old and feeble men. I cannot understand—I do not think it has been satisfactorily explained—why it is that in perineal prostatectomies there is practically never the amount of hemorrhage that one finds in suprapubics. We have had two cases lately where there was a very profuse hemorrhage immediately after the perineal prostatectomy, and something had to be done. We have tried every means of packing around the tube with gauze, holding the bladder neck down, but without much success; so that in these two cases we have used the Hagner bag in the reverse position, simply putting it empty into the bladder, blowing it up and pulling it down against the neck of the bladder and attaching it to the leg. That immediately stopped the hemorrhage. In one case the bag was removed after eight hours, in another case after twenty-four hours. In the meantime the patient passed three ounces of urine by urethra.

Dr. Bernard Erdman, Indianapolis: In a very large experience in prostatic work with Dr. Wishard and Dr. Hamer, we have never had the misfortune to have the bag come apart in any way.

I have a bag of my own which I have used not less than ten times. I have no hesitancy in boiling it to sterilize it. We use commonly two sizes of the Hagner bag. The smaller one we use where we have a small growth, and the larger one when we have large and easily and readily enucleated growths.

The crutch which Dr. Hamer presented to the American Urological Association last April is of inestimable value. It gives all the tension you want to make, and at the same time allows you to increase that tension, and it will deflate and allow the crutch as well as the bag to remain in the bladder. In the event that you have considerable oozing coming up you can again inflate the bag, put the tube through the opening in the crutch, drag it down tightly against the surface, and stop the bleeding. Dr. Barney is right when he says that if the bags are not well brought down into the prostatic opening after the enucleation is made the liability to hemorrhage is increased.

I have heard considerable expressions of opinion here about anesthesia, spinal, and general, but very little about gas. We use gas, oxygen and ether in practically every instance. In the summer of 1906, in Vienna, I had the pleasure of seeing Dr. Zuckerhandl do between 100 and 200 major genito-urinary surgical procedures below the umbilicus, with the use of tropacocain. They were in the habit of making a spinal puncture, withdrawing about 5 c.c. of spinal fluid; they use tropacocain in 0.5 c.c. of spinal fluid, and then with a syringe allowing it to flow in very slowly by gravity, then lowering the syringe, allowing the spinal fluid to flow off into the syringe; and in that way mixing more or less of the spinal fluid with the tropacocain, allowing sufficient time before beginning the operative procedure.

Dr. Oswald S. Lowsley, New York: I have always felt that any sort of an inflated bag in the neck of the bladder was wrong in principle. We know that the bladder will contract when distended; and if we put a bag in that causes sufficient pressure to stop bleeding the sphincter will tend to contract spasmodically with the result that it will be more apt to continue the bleeding rather than stop it. It seems to me to be much the easier procedure to put in a great big tube; in the first place, to stop the bleeding at the time of the operation, which is the proper thing to do. If there is sufficient bleeding to be embarrassing, then the patient should be placed in the Trendelenburg position while yet under the anesthetic. It can then be determined within one minute whether the patient is going to bleed seriously and bleeding points clamped and tied. It seems to me much more desirable to put in a small amount of packing, which can be increased if necessity demands, rather than put in a distended rubber bag which causes this spasmodic contraction resulting in continuation of the bleeding. The matter of suction, or the matter of proper tight fitting drainage after the operation seems to be important. I believe in the suction apparatus, because it is important to keep the patient well drained and dry. If suction apparatus is used properly it will not cause additional bleeding, because we put in a big tube and inside of that put a smaller tube which does not reach to the bladder, it only causes suction within the large tube; and then we attach that to the ordinary suction apparatus. There are various methods of drainage suction devices. Dr. Byron T. Caples at Bellevue has devised a vacuum suction apparatus which works very well.

Dr. W. C. Quinby, Boston: In the control of hemorrhage following suprapubic prostatectomy I have never had to resort to the use of the Hagner bag; I have always had one available, but have never had to use it. It has always seemed to me that one of the main aims to be strived for and which should always be accomplished before putting the patient back to bed after suprapubic prostatectomy, is a sufficient control of the hemorrhage at the time of the operation. When this has been adequate there will be no qualms in regard to the patient's subsequent career with respect to hemorrhage; and therefore, as Dr. Lowsley and so many of you have advocated in the past, and still continue to advocate, I have always inspected the prostate bed very carefully and ligated any bleeding that was definite enough to need ligation. I have found that the use of a gauze tape soaked in a coagulant (kephalin) and packed for a few moments into the cavity from which the gland has been removed is really of distinct advantage. After the bladder wall is nearly sutured and just before the drainage catheter is adjusted this tape is removed. I mention this as an added means which we make use of to prevent undue bleeding.

Dr. Bernard Erdman, Indianapolis: If you are going to put anything in the bladder why put in the gauze? If the Hagner bag prevents contraction of the bladder neck, the gauze will certainly prevent it. Packing the gauze down into the wound would not offer anything at all superior to the use of the Hagner bag, and has one disadvantage in the fact that when you remove the gauze it always causes a great deal of pain to the patient because it is packed down so tight and the blood makes it stiff and hard; whereas if you use the bag you can lubricate with sterile oil or water. You can inflate the bag and if there is any bleeding after a couple of hours you can continue to tighten up on the bag. If you do use the bag, be sure that it is packed down and that the opening is well closed. Dr. Pilcher a short time ago called particular attention to the use of the bag with a catheter arrangement. The introduction of a catheter is another element of danger; and for that reason we have simply used the bag together with a tube in those instances where the patient has no severe bleeding, packing with homoplastic gauze first if severe. Then you can go home and forget all about it.

Dr. Oswald S. Lowsley, New York: The criticisms of Dr. Erdman are not well taken. In using gauze we pack the prostatic cavity, not the neck of the bladder. In using the bag you compress the neck of the bladder. I approve of the use of any styptic.

Dr. Gustav Kolischer, Chicago: As to the hemorrhage after a prostate enucleation, I am convinced that a great many of these prostatics who die after the operation under all kinds of very scientific diagnosis, simply ooze themselves slowly to death into their bladder. Their resistance is so lowered that they cannot resist the infection which occurs after a prostatectomy. Some years ago I suggested the running of a hemstitch around the edge of the prostatic cavity and then securing the bleeding points in the bottom by ligatures. That prolongs the operation very much, being a painstaking affair, and is generally not sufficient. It does not check parenchymatous oozing.

Whether you use the Hagner bag or gauze for compression there is always one objection, you have to remove the bag or whatever it may be, and then you may have a secondary hemorrhage, which is very dangerous for an old man, and hard to stop.

In discussing this sloughing around the tube we have used for draining the bladder, Dr. Schmidt pointed out the possibility that we may have to deal with idiosyncrasies against rubber. Recently I have used glass tubes, instead of rubber tubes, and it seemed to me that the sloughing around the drainage point has been reduced to some extent. You may ask how we are going to stop the hemorrhage. I do that by transplanting fat into the cavity resulting from enucleation of the prostate. You put in a tampon that is not to be removed. Part of this fat, as proved by experiment, becomes attached, and part of it will float out in drops or chunks. Of course, you have to be careful to fasten the fat into this cavity, to tie it down with one suture; otherwise the fat will slip out of position. One of my associates put fat in and did not anchor it properly; the bladder closed up, and finally a stone formed around this fat.

The introducing of a catheter after a prostatectomy presents a great danger. Whenever you introduce an instrument you may produce very intense inflammation. The checking of the hemorrhage is absolutely important, but you will often hear statements that there is no considerable hemorrhage, or that the hemorrhage is fairly well controlled, etc. That is not good surgery. We have to be sure that the patient does not bleed after closing the wound, and that he will not bleed afterward, whether it be one or two days. The patient must not bleed at all; and you must have a guarantee against subsequent hemorrhage.

Dr. L. E. Schmidt, Chicago: I want to make the same plea that Dr. Gardner has with regard to the two-step operation. There is no question in my mind at all as to its success if it is carried out the way the doctor describes, allowing a period of time to elapse which varies in different individuals. Between the first and second step I oftentimes allow anywhere from one month to two or three months to elapse; occasionally allowing the patient to go home, particularly if they come from the country, letting them take their own time practically, instructing them to return when they feel thoroughly recuperated. With some individuals who are in exceptionally good condition, possibly a week or ten days, or two weeks may be allowed; but, as a rule, a longer period of time is permitted to elapse. Of course, if you take into consideration the entire length of time of their stay in the hospital, the two-step operation is unquestionably longer.

So far as the hemorrhage is concerned, I want to say that I have lost only one patient in over three years in private practice in connection with the two-step operation, and this death occurred from embolism four weeks after the second operation. As far as hemorrhages are concerned, I am under the impression that careful work in the enucleation eliminates the necessity of using a lot of these apparatuses, packing, etc. I have been in the habit, particularly in the last few years since I have been doing the two-step operation in which the hemorrhages are as a rule far less than in the one-step operation, of eliminating as much as possible the use of these various methods of stopping hemorrhages. I have been in the habit, though not able to state positively the exact benefit derived, of using various preparations, such as serums. It has struck me that excessive hemorrhage has been far less. The hemorrhage has been practically cleared up in the course of six or eight hours in most of the cases sometimes at the end of twenty-four hours. I think, therefore, if you can avoid the unnecessary use of the bags and packing it will avoid a lot of disturbance to the patient, particularly when it comes to the removal of these bags and gauze which we know are productive of pain; and as we know also, if they remain any length of time, the reaction in old people who have cardiac troubles is of great severity.

Dr. V. D. Lespinasse, Chicago: In regard to the transplantation of fat as a hemostatic, we have found that in addition to the mechanical effect of a foreign body we have a certain amount of hemostatic ferment produced from the breaking down of the cells of the fatty tissue that aids in the coagulation of the blood. These hemorrhages from the prostatic capsule can be controlled perfectly by the use of almost any of the hemostatic powders that are on the market now, either powders or semiliquids, they are all of value. Most of them are finely ground tissue, lung, brain, etc. Some of them are serum with the water driven off in vacuo, the residue dried and powdered. The best of these hemostatic powders is made by the addition of very weak acetic acid to an extract in cold water of ground lung, which makes a brownish powder which I have used very extensively for many years, for hemorrhages of the bladder, long before these hemostatic powders came on the market at all. You can sprinkle it on gauze and then hold the gauze on the bleeding surface; the bleeding ceases almost at once and the bladder cavity is perfectly dry when you have completed the operation.

Another point about hemorrhage, if the patient is septic, he is more liable to bleed than if he is not septic. With most of the types of sepsis there is a disturbance in the mechanism of clotting of the blood, and these patients bleed much more easily and much more persistently than do perfectly normal individuals. The sepsis produces a certain amount of hemolysis so that the control of the sepsis has a very important bearing on the prevention of hemorrhage.

Finally, when everything else has been done and the bleeding still continues, fill the patient's blood vessels with blood by some of the methods of transfusion. A patient should not die simply from loss of blood. This calamity in this day and time is inexcusable. They should be filled up time after time, and then, if they keep on bleeding after one or two transfusions, try to stop the hemorrhage. The transfusion should be repeated from time to time as may be necessary. The transfusion fulfills two purposes; it replaces the lost blood and aids the patient to overcome his sepsis.

Dr. C. M. Harpster, Toledo, Ohio: Are we thoroughly convinced that the removing of the entire amount of urine from the bladder of a patient suffering from overdistention and retention suddenly, conduces to shock, and sometimes the death of the patient? I, for one, am. I have used successfully a considerable number of times, and heartily endorse the method of Lower in these cases where the patient is desperately sick, with retention and distention, and he has been severely traumatized by the attempts of the attending physician to pass a sound or catheter. I pass a large trocar just above the pubes (the intestine will not be over a distended bladder) and pass a large catheter through the trocar and fix the catheter in position with a stitch through the skin high on the catheter, or fix the catheter with the catheter retainers of Euard. By having an artery clamp on the end of the catheter, the urine can be let out at will. In some of my cases, before removing the prostate, where an acute retention has occurred, I have left the catheter in position three or four weeks. In this way I have been able to relieve the back pressure, and at the next sitting the prostate can be removed perineally or suprapubically as desired. In a number of cases I have done a perineal prostatectomy after this method of suprapubic drainage has been used for some weeks.

Dr. MacGowan: Do you cut down on the bladder?

Dr. Harpster: No; I place catheter in the bladder, through the trocar, and fix the catheter with a stitch or otherwise. No anesthetic is necessary, as a rule, although I have in several instances infiltrated with procain. It can be done in a minute. There is no shock or disturbance to the patient. I have never seen extravasation of the urine occur as is claimed by some. If properly done you will not puncture any bowel or have any extravasation of urine.

Dr. Granville MacGowan, Los Angeles: I have seen peritonitis and urinary infiltration following the use of the trocar and disapprove of it. The discussion has proved profitable in making prominent the devices for the control of hemorrhage. First, the Freyer tube; for many years I combated its usefulness, but after having employed all kinds of systems of drainage and appliances and devices for stopping hemorrhage in the past four years, I have satisfied myself that the great big tube of Freyer has every advantage to commend it, in safety for the patient and comfort for his attendant. The tube must be sufficiently large so that it gives free exit to all drainage and must not touch the bottom of the bladder or come in contact with the internal sphincter, for it will cause intermittent irritation and tenesmus which will produce the hemorrhage it is sought to avoid. Any ordinary hemorrhage after a prostatic operation will be controlled by this tube. Dr. Louis Schmidt seeks to prevent hemorrhage by commencing at the anterior angle of the gland and believes one is less likely to break into the capsular network of the veins in this way, which seems reasonable. Whenever one packs the cavity, the gauze cannot be removed without danger of secondary hemorrhage until it has loosened itself. I have had some very disagreeable experiences following removal of gauze packs from prostatic cavities. I have never had occasion to try Dr. Kolischer's idea of using fat in the prostatic cavity as a hemostatic. I cannot convince myself that it is a right surgical procedure in a hollow viscus. It is valuable about the kidney pelvis when some small blood vessel has been wounded in closing the incision and its oozing cannot be controlled by ligature.

The bag of Hagner is not an unalloyed comfort. I would not like to be without it. It has, at times, been of great service; at other times it has seemed to provoke, through causing tenesmus, the hemorrhage it is designed to prevent or to stop. If the hemorrhage is very smart and persistent in the abdominal incision, one should allow inspection of the cavity; if any blood vessels are seen spurting, they should have a ligature placed on them, or the tissues of the bladder neck basted over with a running sature of catgut, as well as possible.

Dr. James A. Gardner, Buffalo: Dr. Kolischer has answered Dr. Kretschmer's criticism of the "Silent Prostate." The patient does not recognize it and the general practitioner does recognize it but treats the patient for somthing else, and the name "silent prostate" was used for that reason. There is no question that many patients bled to death after prostatectomy without our realizing it when the continual irrigation was used. The patient was supposed to be dying of shock, when they were really dying of hemorrhage.

I fill the Hagner bag with water. Water is very much more satisfactory than air.

I like the Pilcher modification of the Hagner bag because we get the benefit of drainage through the tube that is in the urethra. The reason I have used the Hagner bag when there has been no severe hemorrhage was that I could not seem to stop the oozing, because, as Dr. Kolischer has brought out—and I agree with him—those cases which have looked all right at the time of operation, and were not bleeding much, developed a good deal of hemorrhage in from one to twelve hours.

For a number of years before I used the Hagner bag I packed the prostatic cavity with gauze. After twenty-four hours, as the urine softened the upper layers, the gauze was removed. This procedure was performed every four hours, until all the gauze came away, which usually took about twenty-four hours.

We use practically the same thing as Dr. Hamer's crutch with a slight modification; instead of using the clamp to take up the tension on the tube, we use some cord with a sailor's knot which does not slip and yet incidently does not shut down the caliber of the tube; therefore, through this tube you have drainage unless it is clogged by a clot.

I am very glad to second what Dr. Schmidt said about allowing time to elapse between the first and second operation. I think it is very important. I have had patients go three months between the first and second operation when it would have been absolutely impossible to operate on them safely when I first saw them, but having a chance to build up, they became very simple cases.

We have had a few patients every year who absolutely refused a prostatectomy, saying that they would rather die than be operated on. I inform them that they need a slight emergency operation under local anesthesia and that they can go home in about a week's time. Following the placing of the Pezzer catheter in the suprapubic wound which usually closes in a week, they are permitted to go home with instructions to use sweat baths; have the bladder washed daily and keep the bowels open. After being home for a week they return, stating that they feel very much better but that the suprapubic drainage was rather inconvenient. It is very easy at this time to persuade them to have a prostatectomy.

Dr. Harpster spoke about Dr. Lower's trocar. I was very much pleased when I got my first one. I tried it on two or three occasions but found that it seemed to irritate the patients. My main objection is that men who could use it safely can just as easily do a suprapubic cystotomy, and those who cannot perform a cystotomy will either go anterior to the bladder or behind into the intestines.

ACUTE COLON BACILLUS INFECTION OF THE URINARY TRACT *

J. DELLINGER BARNEY, M.D.
BOSTON

Much careful and fruitful study has been given the question of acute nontuberculous renal infection. The work of Brewer, Cunningham, Keyes, Jr., David, Cabot and Crabtree, and finally, that of Culver, Herrold and Phifer shines forth brilliantly and forcibly. At the same time there is no denying the fact that cases of the type mentioned go frequently unrecognized, or are wrongly diagnosed, or, by a mistake in judgment, the patients are operated on unnecessarily. The object of the present communication is to emphasize certain points in the diagnosis and treatment of these cases, in the hope that they may be recognized more readily and treated more intelligently.

My observations are based on a series of cases seen during the past year, all but one occurring in private practice in well-to-do young men.

From an etiologic standpoint we know that the colon bacillus was responsible for the lesion in each case, but the exciting factor, the exact circumstance which started the colon bacillus to assume its extraordinary activity, is still in the dark. Why should an apparently healthy person without obvious abnormality of any part of the urinary tract and with urine known, in many instances, to have been previously normal, suddenly and without demonstrable cause become thoroughly infected by the colon bacillus? Such was the situation in four of my patients, the condition of whose urine was known just before the onset of the infection. In these patients, as well as in the others, there had been no urinary disturbance of any sort, subjective or objective, recent or remote.

POSSIBLE EXCITING CAUSES

By careful examination and inquiry certain possible exciting causes were demonstrable. In the first place all gave a definite history of being unusually "run down" from mental or physical overwork. Three were students in the midst of final examinations, anxious and underweight; one was a civil engineer with a difficult job on his hands and four weeks previously the victim of an automobile accident, with severe lacerations of the leg which had become mildly septic but which were nearly healed at the time of onset of the kidney infection. There was no trauma to the body but the patient was more or less shaken, twisted and bruised. Another was a mail clerk, handling more than his share of heavy mail sacks; the fifth was an undernourished, hardworking laborer, who led a most unhygienic life; the sixth was an exceedingly busy Chicago doctor, who noted the onset of his trouble after an unusual physical effort in lifting a heavy patient. In this case, however, as well as in one of the students, the civil engineer and the laborer, a chance examination of the urine previous to the infection showed nothing abnormal.

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* Read before the Section on Genito-Urinary Diseases at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

It has been demonstrated beyond a doubt by numerous careful observers, not only that organisms of all sorts, such as cocci, colon, typhoid, anthrax, leprosy and tubercle bacilli, may and do circulate freely in the blood stream, but also may be and often are excreted by the kidney without producing demonstrable lesions in that organ. Cabot and Crabtree,[1] in their recent exhaustive study of nontuberculous renal infections, after an examination of all the evidence, conclude:

> The array of apparently conflicting testimony has brought certain eminent observers to the conclusion that in cases where no lesion was discovered it was because a slight lesion had been overlooked. This we believe to be an entirely unwarranted conclusion. In view of the fact that insoluble substances have been shown to pass the kidneys without damage; in view of the fact that many competent observers have passed bacteria through the kidney repeatedly and then examined these kidneys after sacrifice of the animal; and in view of the fact that we are daily accepting the clinical evidence obtained by the study of patients in regard to the integrity of their kidneys, we cannot avoid the conclusion that bacteria pass the healthy kidney. That they do not do so always, or under all condtions, simply confirms the well-known fact that local conditions in the kidney and general conditions in the organism influence the occurrence or nonoccurrence of infections. While we are prepared to admit the accuracy of all the observations above quoted, they seem to us to prove conclusively that organisms circulate in the blood and pass through the kidney, in many cases without producing any lesion and in many other cases with the production of various lesions.

My own experience confirms this view. One patient whose urine was known to be normal before the onset of symptoms, and who was desperately ill as a result of his infection, made a speedy and uninterrupted recovery and has had an absolutely clear and sterile urine ever since, now nearly a year since his illness. Two others who were seen shortly after recovery had but a few leukocytes and colon bacilli in the urine, in contrast to the enormous numbers of both elements found during the height of the infection. It is obvious, therefore, that the most severe infections may go on to complete recovery without operative interference, assisted only by nature and such palliative treatment as we have to offer. While no definite statement may be made, it is possible that this may account for some of the miraculous cures of kidney infection reported after lavage of the renal pelvis with various solutions, notably the solution of aluminum acetate advocated by Koll.[2]

It is also obvious from a study of my cases and those of others that infection, once established in one or both kidneys, may continue almost indefinitely in spite of all effort to relieve it, and without any demonstrable harm to the organ or to the individual. For example, one of my patients had bilateral infection of the kidneys. Constitutional disturbance, loss of weight, anorexia and backache were marked and persistent, and the temperature was elevated for many days. Today, three years after his acute illness, the urine contains innumerable colon bacilli and pus cells. There is, however, no temperature at any time, there are no symptoms referable to kidney or bladder, and the patient has gained steadily in weight and strength. In other words, he has immunized himself to the infection and it is unlikely that, barring some general or local devitalizing factor, he will have an exacerbation of the original process. Such, at any rate, has been my experience.

NATURAL AND ARTIFICIAL IMMUNIZATION

This case has followed closely the order of events seen in patients with obstructing prostate. The residual is at first clear and uninfected. With the establishment of bladder drainage, either by suprapubic cystotomy or by an inlying catheter, infection of the bladder soon makes its appearance, closely followed by kidney infection with an accompanying rise of temperature, generally ushered in by a chill, backache, malaise, a drop in the daily amount of urine, and a decrease of renal function. In other words, we have produced more or less artificially and with malice aforethought the very condition of affairs seen in the cases the reports of which form the substance of this paper. Yet experience has shown that this renal infection is beneficial rather than otherwise, and is bound to occur sooner or later. If, however, it takes place before operation, the patient weathers the storm fairly well, immunity is established, and no further exacerbation is to be expected. On the other hand, if such an infection occurs just after, instead of before operation, it goes hard with the patient, who then has the onerous task of immunizing himself against infection while he is battling with the effects of the operation. The load is often more than he can carry and he falls by the wayside.

That there is such a thing as natural immunity to colon bacillus, I think all will agree. Artificial immunity is, however, more difficult to accomplish. Some time ago, my colleague, E. G. Crabtree, working in the laboratory of the Massachusetts General Hospital, found that the blood of a normal young adult would clump colon bacilli in a dilution of about 1:40. In patients with an infection of long standing with this organism, the immunity was much higher, sometimes 1:600. In view of this, studies in artificial immunity were undertaken with what seemed at first to be marked success. The immunity, as measured by what was believed to be accurate means, was found to increase progressively with each dose of vaccine, and many cases of obstructing prostate with uninfected urine were carried through operation and convalescence with no evidences of infection.

SYMPTOMS

My belief is that renal infection with or without obvious cause in kidney or bladder may, and often does, begin insidiously and may even go on for years without the patient's knowledge. Such is the case in the old man who presents himself with an obstructing prostate and with a well marked pyelonephritis, but from whom no history of any acute infection can be elicited. But when his infection comes on after catheterization in a previously sterile urine, it resembles in its severity and sudden onset the infection seen in the cases under consideration. The difference is that in the one case we can locate the determining cause, namely, the catheter; whereas in the other, we are forced into more or less speculation and theorizing.

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[1] Cabot, H., and Crabtree, E. G.: Etiology and Pathology of Nontuberculous Renal Infections, Surg. Gynec. and Obst., 1916, **23**, 495.

[2] Koll, I. S.: Am. Jour. Urol., 1911, **7**, 417.

In the acute renal infections now under consideration, sudden and severe bladder irritability was the first symptom noted in every instance. This included frequency, urgency, and dysuria and hematuria (both generally terminal) in various combinations and degrees of severity. In this respect my experience differs with that of Culver, Herrold and Phifer[3] who found that bladder symptoms stood third in order of frequency, time of appearance, and predominance. It is notable that colon bacillus infections of the urinary tract of long standing and less severity generally produce no bladder symptoms whatever.

Symptoms referable to the kidney were noted in only four cases, appearing either just after the onset of the disturbance or not for some days later. In one there was generalized lumbar pain, in another the symptoms pointed only to the right kidney, while in two attention was called only to the left kidney. Tenderness in the costovertebral angle was noted in all these cases corresponding to the seat of pain, and in those with the most severe infection it was extreme.

In only two cases was there a chill, either at the onset of infection, or during its course, but both patients presented a severe infection, and in one, from whom a blood culture was made at the height of the chill, the colon bacillus was found. While the results of blood cultures have often been unsatisfactory, I can state from a considerable personal experience in these and other renal infections that if one follows the technic developed by Crabtree, the findings will be more satisfactory. The latter, "in a series of thirty-two cases obtained positive blood cultures in 40 per cent., a ratio larger than that ordinarily obtainable in typhoid fever, which is admitted to be a bacillemia." The secret of success lies in taking the culture at the height of the chill as in malaria, and the order of events, if studied closely, will be found to be bacillemia, bacilluria, pyelitis and pyelonephritis.

A symptom noted in one of my cases, and one to which I have not seen attention called elsewhere, was severe urethritis, with a profuse purulent discharge containing the colon bacillus in pure culture. So marked was the urethritis, dysuria and urgency that the resemblance to an acute prostatitis of gonococcal origin was very strong.

A composite history of these cases embodies many of the clinical symptoms of typhoid fever. Indeed, such was the probable diagnosis in a group of cases (not recent) from the Massachusetts General Hospital, studied by Cabot and Crabtree. These authors believe that:

> These cases simulating typhoid and due to the colon bacillus, in other words, cases of colon bacillus bacillemia, are much more common than has been generally supposed. The records of any large hospital during recent years will show a considerable number of these cases in which clinical symptoms suggest typhoid, but the diagnosis could not be confirmed and they were finally discharged cured, often with a diagnosis of paratyphoid. A correct solution can be obtained only by careful study of the blood and urine with good technic, and particularly when they are seen at an early stage of the disease.

Cystoscopic examination of the bladder yields but little information. The mucosa is in some instances velvety and deeply injected, perhaps more on one side than the other, but often there is no special change. Catheterization of the ureters, however, gives more definite data. In three of my cases the urine from each side was loaded with colon bacilli and pus, while in another colon bacilli alone were found. Subsequently, however, the urine from both kidneys showed pus as well as bacilli. It has been interesting to note that in no case has there been any appreciable decrease of renal function as shown by the phenolsulphonephthalein test, either as regards time of appearance or total output. In this respect, my observations in these cases differ from those in cases of obstructing prostate, wherein after the onset of renal infection and pyelonephritis a drop in function is not uncommon. Pathologic evidence would indicate that this is due to an "acute cloudy swelling of the kidney, probably involving chiefly the tubular portion. That this process is short-lived and goes on rapidly to practically complete recovery is suggested by the return of kidney function and conclusively proved by the appearance of the kidney postmortem."[1] Clinical evidence is sufficiently abundant to bear out this conclusion, and it may be argued that in my own cases the observations were made either before any pathologic changes had occurred in the kidney or after they had cleared up.

SEARCH FOR FOCUS OF INFECTION

A careful search of each patient failed to reveal any focus of infection, past or present, which might account for the onset of the renal condition. It has already been noted that all patients were more or less below par, and one in addition had had an injury which might have indirectly induced his illness. One young man had an extensive pyorrhea alveolaris, another had been told a year or two before that his tonsils were inflamed and should be removed. The roentgen-ray examination was negative in all, in that no shadow which could be properly interpreted as a stone could be found, while in one case a painful and tender left kidney was found considerably enlarged, an observation already made by palpation of that organ. In other words, one can say no more than that the infection came, as it were, "out of a clear sky," arising undoubtedly from a definite focus but undiscovered, perhaps undiscoverable, by the diagnostic methods employed, and finding fertile soil in an organ devitalized by one cause or another.

While it would appear from the previous history and roentgen-ray examination of my cases that renal calculus was not a factor, this cannot be positively excluded. Furthermore, who can deny that renal retention, unilateral or bilateral, produced by ptosis, simple or complicated by an aberrant vessel or other band, did not encourage the prolonged residence of organisms which otherwise would be transient? Doubtless, further and more exhaustive study of these cases would have settled the question, but it would be poor judgment to undertake any prolonged examination, especially one involving, as it would, pyelography and distention of an acutely inflamed renal pelvis. In those instances in which complete recovery has taken place, or seems likely to occur, such an examination would appear to be superfluous. One can explain the phenomena by concluding that the infecting organism, arising from a definite focus, demonstrable or otherwise, overwhelmed by its numbers and high virulence first the kidney, or kidneys, and then the patient. On the other hand, when the renal infection persists for any considerable time after its acuteness has subsided, every effort should be made to determine the exact status of the renal pelvis, for it is in these cases that some interference will be found with the outflow of urine from the organ. While it does not, however, always follow that the correction of such an abnormality will wipe out the infection, it is my belief, and experience, that acute exacerbations of the infection are extremely unlikely.

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[3] Culver, H., Herrold, R. D., and Phifer, F. M.: Renal Infections, The Journal A. M. A., May 18, 1918, p. 1444.

TREATMENT

When it comes to treatment the judgment of the surgeon may be sorely taxed and only a considerable experience, exact diagnosis, and regard for the pathology of renal infections will point the way. Having once established a diagnosis of colon bacillus infection of one or both kidneys, one is greatly aided in his decision by remembering the statement of Cabot and Crabtree that "the colon bacillus rarely produces suppurative lesions of the kidney in man, while in animals it may readily do so; and this has given rise to the quite erroneous assertion that the colon bacillus commonly, or even regularly, produces abscesses of the kidney." On the other hand it must not be forgotten, as pointed out by these authors, that "it is not rare to find kidneys showing the evidences of at least three infections differing in point of time and often in the nature of the organism involved." Given a case with history and physical examination similar to those described, "watchful waiting," tempered by judgment, and this in turn founded on experience, may be safely employed. Inasmuch as pathology has shown that the colon bacillus affects chiefly "those portions of the kidney relatively accessible to formaldehyd-containing drugs," the latter must be worked judiciously and vigorously. I consider that hexamethylenamin given in 7½, or even 10 grain doses every four hours, together with 10 grains of the acid (monobasic) sodium phosphate, and the administration by mouth or rectum of large amounts of water or of saline solution subpectorally, is a most efficient combination. Free catharsis, if not already produced by the acid sodium phosphate (which it generally is) should be accomplished. Otherwise drugs are of little value except as indicated for pain or sleeplessness. Absolute rest in bed, with hot fomentations to the lumbar region, is a sine qua non. Should a definite cause of infection, such as renal stone, be found, it should be properly treated, but in its absence palliation along the lines indicated is alone sufficient. While in a thoroughly septic patient, with temperature, chills, nausea and vomiting, profuse sweating, and a painful, tender and enlarged kidney, the temptation to operate is strong, the recollection of the pathology, the knowledge that in more than 50 per cent. of the cases the infection is bilateral, and the experience which has seen patients in other equally bad cases recover, will perhaps stay the hand that is eager to grasp the knife.

ABSTRACT OF DISCUSSION

Dr. H. L. Kretschmer, Chicago: One point that always interests us most is the route by which the colon bacillus gets to the kidney. People in Boston are very firmly convinced that the colon bacillus gets there through the blood stream. Perhaps they see more acute cases than we do. Some of the bacilli doubtless reach the kidney through the blood stream. I believe, however, that there are other routes of infection. Francke has been able to demonstrate what appears to be a direct lymphatic connection between the large colon and the capsule of the kidney. The work of the Japanese seems to point to the fact that there is a direct lymphatic connection between the lymphatics that run over the fatty capsule and the lymphatics within the kidney. If this is true, it is very easy to see how these organisms may travel through the lymph system from the large intestine to the kidney.

Asch has been able to produce bacteriuria in dogs by feeding them opium so that the bowels were locked up from seven to ten days. Without treatment of any sort, except to open up the bowels, the bacteriuria promptly disappeared; so that the lesions of the intestinal tract may be a predisposing factor in the production of renal infection by the colon bacillus. Many of these patients have a history of colitis. Many cases occur in the children's hospitals during the summer time, when gastro-intestinal disturbances are common in children. Some of our cases have had disturbances of the colon, and treat them as we would, we have been unable to make any progress until the colon conditions were corrected.

Not only lesions of the colon but lesions of other organs should always be studied. In The Journal of the American Medical Association, June 24, 1916, F. W. Goarde and I reported several instances in which infections in the prostate and seminal vesicles were not treated and the patients had relapse of their renal infection, and we came to the conclusion that they relapsed because of the presence of infection in the prostate and vesicles. In another of our kidney infections which was not due to colon bacillus, we found *Streptococcus viridans* in the blood, and in the urine from both sides and in some abscessed teeth; so that this problem is not a local urinary problem. In some of these cases we found associated lesions in the pelvic organs, and we always aim to correct these.

We accept as cured only cases in which we have been able to render the urine sterile and free of pus. We have not relied on the ordinary routine urinary examination, but insisted on obtaining sterile cultures.

Dr. Granville MacGowan, Los Angeles: I think that Dr. Kretschmer struck the real keynote when he said that both colon infection and bacteriuria are not a local but a general problem, and unless you fully admit the hopelessness of the expectation of creating a cure in so many cases, what Dr. Schmidt has so frankly said must be conceded. Yet, at the same time, that does not excuse us as physicians from using every measure we can employ and every power we possess to discover the reason or cause for the presence of these bacteria in the urine. Oftentimes, the presence of bacteria in the urine does not mean that the person is in bad health; it does not necessarily indicate that he is in a definitely diseased condition that comes home to him in the shape of particular symptoms. In every case bacteriuria is the sign and symptom of a diseased condition, and is accompanied by prostatitis in males and cystitis in females, and there is no longer true bacteriuria, but an inflammatory condition of the mucosa of the urinary tract. My observation has been that these cases of colon bacillus bacteriuria and colon bacillus infection of the urinary tract, when persistent, are invariably due to colon stasis. This chronic stasis constantly produces a constant supply of bacilli in the circulation and by lymphatic connections they get into the capsule of the kidney and from there into the cortex, down to the tubular portion, creating eventually an infection of the kidney pelvis on their way out. If there is any invasion either in the ureters or in the neck of the bladder, or in the urethra, we will in all likelihood not only have colon bacillus infection and bacteriuria but we will also have pyelitis and eventually have true cystitis.

Dr. Oswald S. Lowsley, New York: Colon bacillus infections of the kidneys and ureters are the bugbear we have to face. I quite agree with the speakers that the removal of bacteriuria is very difficult, and practically impossible. Such people should be subjected to just as thorough an examination as it is possible to give by means of the roentgen ray to determine whether there are foci in the sinuses or bony structures in the prostate. The treatment is a very interesting and delicate matter. In the height of the acute exacerbations it is unwise to give them acid sodium phosphate and hexamethylenamin, but I do think that kidney pelvic drainage is important, if the temperature remains elevated. If the patient has repeated chills and there are symptoms of distention of the kidney pelvis, put in a catheter and allow the material to drain from the pelvis. My reason for saying that it is unwise to give the above mentioned drugs in acute exacerbations is that it will produce more edema of the mucous membranes than already exists, and will tend to increase the blockage of the canal. When the catheter is in place, however, and carefully watched by a competent person and kept open, great relief may follow and the patient's temperature will generally drop very promptly and relief from that particular attack will occur. In chronic cases renal pelvis lavage is very important; but it seems to me a wise procedure not to wash out more than one kidney pelvis at a time, because the reaction after treatment is sometimes very severe, and if both kidneys are subjected to this it introduces a new complication.

Dr. Bransford Lewis, St. Louis: I would not like to have the pessimistic tone prevail as expressed by Dr. Schmidt, although I have encountered cases of bacteriuria that I have been unable to overcome. Still, I would not like to have his expression applied to all the cases that you cannot do much for them. For some you can; for some you cannot.

Success in many of these cases depends on whether or not ou detect the focus of infection.

Dr. C. W. Bethune, Buffalo: I have been very much impressed with the history of colon infection, especially in a woman whose case was thought to be trouble from overdistention of the bladder. She was in the hospital with a fractured leg. She had some unpleasant experience with the night nurse and she would not call her during twelve hours of service. After that she had a severe colon infection from which she died. I want to ask Dr. Barney if he ever used ammonium salicylate instead of hexamethylenamin? I believe Wright was the man who first suggested its use.

Dr. J. Dellinger Barney, Boston: My object was to call attention to the fact that these cases of acute colon infection of the kidneys call for the greatest discretion and the highest exercise of surgical judgment. By watching them with expert care they can generally be cured without a cutting operation. I recently saw two patients who had been under the care of other surgeons and had been operated on under the belief that there was acute suppuration of the kidney. No such suppuration was found, and the patients were made distinctly worse. I agree with Dr. Kretschmer that this is not a local affair, but that we must look elsewhere than in the kidney for the primary focus.

As to the method of examination of the urine. The culture is not of very much value, because by the time it is made, some extraneous or secondary organism may be more virile than the real offender and overshadow it. The important organism can best be found by immediately staining a specimen of the sediment of the catheterized urine. We have had but little luck—in fact, none, with the use of vaccines, particularly in these acute cases, although vaccines have been of apparent value in some of the chronic cases. We have been accused of ascribing all these infections to the blood stream. Perhaps we have become enthusiastic because of our success in finding organisms in the blood, thanks to Dr. E. G. Crabtree's very efficient work. They are found there in a very large number of instances. We do not think well of irrigation of the pelvis, particularly in the acute cases. We do find the passage of a catheter is a beneficial application, as it may straighten out a kink or remove an obstruction. We do not believe that hexamethylenamin is an irritant to the kidney, although it does produce bladder irritation in certain instances.

Dr. Louis E. Schmidt, Chicago: I find myself perfectly clear in regard to the connection between the lymphatics, the colon, and the kidney. I stated that that was unquestionably a source of a large number of infections. So far as the colon bacilluria is concerned, it is probably due to stasis or some other condition by which there is a direct connection between the bowels and the colon and then probably reaching the kidney. I know of instances where patients have been operated on for chronic appendicitis, where there have been adhesions and where certain types of bacteriuria have been cleared up. In these cases, however, there has always been an inflammatory exudate, either in the pelvis of the kidney, or in the ureter, in connection with the inflammatory mass. Following these operations in many cases some of the bacteriuria has persisted. In these cases there is, however, as a rule, always pus in the urine and red corpuscles. This is not a distinct case of bacteriuria; it is rather a colon bacillus infection. I have seen numerous cases of this type that belong to this group in which adhesions are present and the symptoms too indefinite to justify operation. I know of two cases in which operation has been performed, both patients being women, in which the bacteriuria has not been improved and the condition still persists. In these cases there have been bands and adhesions, not as in appendicitis where there is an acute inflammatory or subacute inflammatory condition. In these cases I have frequently catheterized and obtained perfectly clear urine from the upper urinary tract and at the same time have found that the urine obtained from that side would be loaded with bacteria and red blood corpuscles.

Dr. Lowsley suggested that many of these cases have reacted to lavage. If there is any trouble in these cases outside of the urinary tract, I really cannot see what you can do with lavage. I did state in my paper that washings of the pelvis might give some relief, but I do not believe that I have ever seen a cure, whether the catheter was allowed to remain in for a long time or not.

In one of my papers I stated positively that all complications that one might suspect as being the source of infection must be treated. To overlook that fact would be the height of foolishness. I did make the statement that from local treatment only of the bacteriuria you can expect results.

So far as Dr. Lewis' criticisms are concerned, if the cases I have referred to are treated in the various ways mentioned, when you cannot find any local or general condition to account for the bacteriuria, I do not see how operative interference with some outside organ can avail, where there is absolutely positive belief of any direct connection. In all these cases local treatment is of no avail, and that is what I wish to refer to particularly.

So far as Dr. Barney is concerned, I agree fully with him as to the statements of his cases. We are all familiar with cases of colon bacillus infections. I will venture to say that the vast majority of colon bacillus infections of the kidney will clear up and are certainly not surgical cases by any means. An occasional case might be met, but very rarely, however. I agree again that where there is pus, after the onset or after this period of exacerbation, where there are a lot of bacteria present, if the urine clears up, these cases are cured, or at least there is no further recurrence in a large number of them; but these cases do not belong to the type I mentioned. There is no question at all that this condition is not to be considered as being solely local.

Report on Prevention of Blindness.—The second annual report of the Illinois Society for the Prevention of Blindness covering the year ending with October, 1917, says that in the state of Illinois there are between 2,000 and 3,000 needlessly blind persons. The organized efforts of the society were begun in 1916 when permanent offices were opened in Chicago with a full-time secretary, Miss Carolyn C. Van Blarcom, who was called by the Red Cross early in 1917 to organize and carry on work in connection with that organization in the East. Miss Dorothy L. Blatchford was then appointed secretary. Twenty-two violations of the law requiring the reporting of infants' sore eyes were prosecuted, follow-up work in ophthalmia neonatorum cases reported by physicians and midwives was done, social service work was started by Miss Blatchford in the Central Free Dispensary, a bill against the improper use of wood alcohol was drawn and promoted in the legislature by Miss Van Blarcom.

HISTOLOGY AND PATHOLOGY OF THE SUPERSTRUCTURES OF THE LID IN TRACHOMA

AND TREATMENT *

E. H. CARY, M.D.
DALLAS, TEXAS

For thirteen years I have operated for the cure of trachoma in its various stages, with distinct advantage to the patient. I had observed for a long time that in the operations made for entropion, the corneal conditions were always made better; and it seemed to me that the modification of this proceeding might be useful in the correction of corneal irritation, even before entropion should appear as one of the end-results of trachoma. As there was little of a definite nature written regarding the pathology of trachoma beyond that which takes place in the conjunctiva, it offered a field for investigation and explanation, thus placing this operation on the lid on a sound scientific basis. The presentation of this subject has been delayed by me for many years, although I am on record[1] as having discussed the value of my repair operation.

I have operated in more than 500 cases, ranging from the most extreme type, that so-called melancholy condition, xerophthalmia, to those of the early second stage, in which pannus was just making itself manifest. I have reached the point at which I can say to the patient, "I will cure you in from three to six weeks," as the case may be; and in few instances has there been a return of symptoms. One of the patients, an Indian, whose right eye gave him further trouble, returned and I found a calcareous mass which, under local anesthesia, I removed and all his trouble was abated. The eyes of another young man who continued to have symptoms after my operation, did not clear up as they should, but he was cured when a canthotomy in each side was performed. There were a few cases in which the cornea would become irritated, the pannus would increase, and one or two superficial ulcerations would appear, accompanied by photophobia and lacrimation and, in truth, many of the symptoms that might be observed before operation. In such cases we shall find a soggy middle turbinal and a sagging membrane over the septum near the middle turbinal, with more or less contact between the two parts. While it is conceivable that this condition of the nose may be brought about through infection of a similar nature, it is more likely that the eye condition simply occurs in a person who has a pathologic condition of the nose, often without being conscious of any nasal symptoms. This nasal condition becomes exaggerated from the chronic inflammation of the eye, with its attendant lacrimation, etc. The removal of the middle turbinal and the cauterization of the mucous membrane which is sagging from the septum will immediately cure the eye symptoms without further eye treatment. The result may be obtained with the cautery alone, without a turbinectomy, but it is not likely to be obtained with the latter when cautery is not used to pin the mucous membrane of the septum. In other words, in the few cases in which the repair operation has been of limited value, there is a distinct reason traceable to a definite cause, which, when removed, results in the abatement of all symptoms. Usually we shall find only one eye affected, but I have seen cases in which both eyes were involved, relieved by the same nasal procedure. The conjunctiva and cornea change completely after the cauterization. The explanation of this I have attempted in another paper.

The histologic condition of the lid will indicate the kind of disease necessary to bring about the crimping of the tarsus, as well as the other changes in and around the tarsus which cause all of the disagreeable trachoma symptoms.

A quick survey of the histologic conditions of the lid from within will show the conjunctiva attached to a fibrous tarsus, in contradistinction to a cartilaginous tarsus often mentioned in the literature. Embedded in the fibrous tarsus, we have meibomian glands, which are sometimes of much importance in the pathology. Lying on the tarsus, close to the hair follicles, and spreading backward from its marginal attachment, the orbitotarsal fascia, or the palpebral fascia, as it is sometimes called, may be traced into the levator muscle. This muscle, attached to the tarsus, is split into many fibrillae, with much aerolar tissue surrounding the muscular ends. Above the orbitotarsal fascia and between it and the skin, is the orbicularis muscle, which is composed of voluntary and involuntary portions. The involuntary part, which is near the margin of the lid, keeps the eye closed when the patient is asleep. Of course, there are numerous glands and other organs of interest in the conjunctiva, as well as numerous glands and hair follicles in the margin of the lid. It is not necessary for my purpose to go into such details as a description of these structures would require. The lid is adapted to the eyeball, naturally curved. What happens to make this lid crimp and bring about the pathologic condition which, if continued, finally destroys the function of sight, is the important point I desire to emphasize.

The operative procedure cannot be successfully carried out without a clear understanding of the pathologic changes which are in process of development. If the ophthalmologist can understand this phase of it, then his repair operation will be directed to the pathologic phenomena presented. My procedure contemplates looking in on the pathologic conditions. I will present the accepted pathologic view of the early changes that take place in the conjunctiva. There are three distinct features characterizing trachoma: granulation, papillary hypertrophy, and the formation of connective tissue. By a large number of authors the disease is divided into two classes, papillary and granular.

STAGES OF TRACHOMA

In the trachoma occurring in Egypt, Callan uses a classification of four stages, depending on the comparative prominence of one of the foregoing essential features. In any classification of this disease, it must be borne in mind that the pathologic changes are so varied that it is practically impossible to have any distinct and definite classification. I see no reason why Callan's classification cannot be used in connection with trachoma in any country, so I am going to adopt this classification to a certain extent. It seems essential that I should include the pathologic conditions familiar to physicians.

Trachoma is a condition of the conjunctiva or mucous membrane of the eyelids resulting in the for-

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* Read before the Section on Ophthalmology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

[1] Cary, E. H.: Proc. Texas State Med. Soc., 1907.

mation of so-called trachoma granules, with or without papillary hypertrophy. In favorable cases, these granules disappear and are replaced by fibrous connective tissue. The essential and primary change in trachoma occurs in the adenoid or lymphoid tissue present in the conjunctiva; the other changes are secondary to the change in the lymphoid tissue.

In the first stage of trachoma, one will find varying numbers of small grayish or grayish-yellow islands or granules on the conjunctiva of the tarsus and of the superior culdesac, especially at the two extremities of the tarsus. These islands or granules are semitransparent, almost avascular, with small blood vessels converging toward them. The granules have an appearance somewhat similar to sago grains. This comprises the first stage of trachoma, according to Callan's classification, and may pass into the second stage or, in favorable cases or cases that have been treated, into the third or fourth stage. In the second stage one of two conditions will prevail: predominance either of granules or of the papillae.

Probably more cases of trachoma come under the observation of the physician during the second stage than during any other; hence the usual division into the granular and the papillary forms. In the granular type of the second stage, the granules are found all over the tarsi and in the upper fornix. As usually seen, the granules are from 1 to 2 mm. in diameter. They are the result of an enlargement of the adenoid nodules or lymphoid follicles usually present in the conjunctiva. This enlargement is due to hyperplasia of the lymphoid elements, that is, the lymphoid cells. Such a granule shows a vascular capsule of connective tissue surrounding a mass of cells, the more central of which are large lymphoid cells with granular nuclei, frequently containing the "cell inclusions," which were at one time considered the probable cause of trachoma. In the peripheral portion of the granules are smaller lymphoid cells, and running through the granules are strands of connective tissue. Along with the formation of the granules there is more or less hyperplasia of the adenoid tissue between the granules, with more or less lymphocytic infiltration. In some cases this change may be so marked that large tumor-like masses are formed, or so diffuse a change may take place that the tissue may assume a peculiarly glossy, gelatinous appearance. That the granules may break down, leaving ulcerations, seems questionable in the minds of many. In the other, or papillary type, in the second stage, occurs the hypertrophy of pseudopapillae. These papillae appear as red raspberry-like elevations which mask, to a greater or less extent, the typical gelatinous granules. This papillary form is most marked on the upper tarsus.

In the third stage, the formation of fibrous tissue and cicatrization is very evident. The first appearance of such cicatrization is in the form of gray or white lines, or striae, running in all directions throughout the hypertrophied conjunctiva. As the condition persists, these lines or striae become broader and more numerous. The extent of the cicatrization will depend on the extent of the primary change in the lymphoid tissue. The first part of the conjunctiva involved in trachoma is just beneath the epithelium, but the lymphocytic infiltration with the later fibrosis may involve the tarsus. The fibrosis with cicatrization may be diffuse or may occur in patches, and in some cases may have stellate arrangement.

In the fourth stage, there is a smooth conjunctiva seamed by white lines of connective tissue. Practically complete cicatrization has taken place, or in other words, the trachoma is cured, and here ends the pathologic study.

TREATMENT OF TRACHOMA

As we all know, the expression operation is frequently of value, and cures many of the cases seen early, or in other words, whenever pathologic conditions are limited to the conjunctiva, and structural changes have not taken place above it. When we reach the stage at which the case presents a pannus along with any other corneal disturbance, we may be confident that we already have pathologic changes in the tarsus, that is, in the orbitotarsal fascia, orbicularis muscle, and other structures of the lid, which make it a source of mechanical irritation to the cornea.

It has been difficult for me to determine what is the most active cause of the crimping, which we see while operating and after taking away the orbicularis muscle. I have observed in all instances a more or less marked tendency on the part of the spreading tendon of the levator with its thickened aponeurosis to roll on itself, so to speak, and to lessen the amount of tarsus in evidence after the removal of the orbicularis muscle. This we see when the tarsus is not thickened, and the crimping of the tarsus disappears as we rid it of the fibrous bands, and push back the rolled-up and adherent portion of the levator muscle. When this is done, the tarsus flattens out. This is the pathologic condition we may demonstrate, and when it is corrected, the apparent crimping of the tarsus is removed. Evidently, fibrous bands produce this rolling-up of the fibrillae of the tendon of the levator, which shortens the normal distance between the margin of the lid and the tendon. That portion of the orbicularis muscle called the palpebral portion, which has remained in a state of spasmodic contraction, is probably due to an involuntary effort of the muscle of the lid to protect the cornea.

The action of this involuntary muscle in contracting is to keep the lid closed in sleep and possibly to lift some of the weight of the lid off the globe. No doubt, the early changes in the conjunctiva have a tendency to crimp the tarsus. Then as a result of the extension of the inflammation into the loose connective tissue between the tarsus and the palpebral portion of the orbicularis muscle, there is an increase of the fibrous connective tissue. In this portion of the lid there is closer union of the muscles with the tarsus. Also, the fibrosis extends in between the fibers of the muscle, causing a shortening of the muscle, which, together with a firmer union with the tarsus, accentuates the already present crimping of the tarsus. Thus a vicious circle is established, with reflex irritation producing spasmodic contraction of the muscle, this spasm being relieved when the corneal irritation is subdued and returning as so-called exacerbations whenever the cornea becomes involved, either through something that irritates the cornea from the outside, or through any lighting up of the pathologic condition that remains in the lid. By observing the picture of the lid, we may readily see how the pathologic condition of the lid will vary in different individuals. In some, the meibomian glands become blocked, increasing localized areas of the tarsal thickening. In some cases there are calcareous deposits and changes too numerous to mention, all of which are under the observation of the surgeon when he follows the operative procedure to be outlined in the care of such cases. No doubt the ciliary part of the palpebral portion of the orbicularis muscle has more or less tendency to produce trichiasis. Splitting the margin of the lid is necessary in some cases to overcome in a more rational way the crimping and particularly the torsion of the cilia. It should be understood that tarsal resection of any degree is a kind of repair of the pathologic changes resulting more in one than in another, due to the fibrosis in the parts above, and to the changes in the tarsus and conjunctiva beneath. With a removal of a section of the tarsus, less tarsal surface is offered for muscular attachment, and this compensates for the loss of muscular tissue that is removed, and directly tends to overexaggerate in the opposite direction the previously crimped tarsus, which had forced a sulcus or sulci beneath the lid. In a broad sense, my repair operation is an adaptation of methods previously used for entropion, with the distinct difference that there is a pathologic condition to correct, which requires the removal of muscular and fibrous tissue, the breaking up of fibrous bands, and the pushing back of the levator tendon, with the probable flattening of the tarsus. All this is done with the understanding that conditions may or may not require splitting the margin of the lid. This is to be determined during the operation, and based on the operator's judgment of his control of the position of the cilia, the skin surface to be stitched. The upper portion of the skin may be removed or not, as he feels the need of pinning the skin surface to the upper portion of the tarsus. This constitutes the fundamental procedure in tarsal repair. Of course, the expression of all granules is the first thing to be done before the lid operation is begun, as heretofore described.

I must not close without impressing the reader with some points connected with the after-treatment of the lids. It is not unusual for the cornea to appear very much irritated, and the eye to look as if the inflammation were exaggerated within a few days of the operation. This sometimes is the result of the use of petrolatum ointment of mercuric chlorid, which seems to irritate some subjects; again the cause is not perfectly clear, except that the operation was performed in a dirty field, and the use of a bandage to control the swelling may tend to block drainage sufficiently to bring about superficial infection. This reaction should not discourage the surgeon; all that is necessary is to treat the lids in the way which would have been followed without the operation, and all the symptoms will rapidly clear up. In a week or ten days the eyelids will be in much better shape, to be followed later with perfect results, and the cure will be brought about in a period of time covering from two to three or four weeks. I naturally take it for granted that every man will be wise enough to treat the symptoms as presented, and if so, success will surely follow in all cases in which this operative procedure is used.

ABSTRACT OF DISCUSSION

Capt. Vard H. Hulen, San Francisco: It seems to me that Dr. Cary's operation is for the cure of the after-effects of trachoma rather than for the cure of the trachoma itself. Evidently Dr. Cary does this operation when there is entropion, because he says that in certain cases he splits the margin of the lid, and that makes practically the old Snelling operation for entropion.

Dr. E. H. Dewey, Des Moines, Iowa: I was with the Indian Service for six years, doing trachoma work. When we get an old case tarsal excision is one of the best operations to cure trachoma. I usually do it under local anesthesia, and rarely have to put in a stitch when I close the wound.

Dr. Arthur E. Prince, Springfield, Ill.: I have on a number of occasions done this operation about as described. I have obtained good results, but I have reserved the operation as a sort of last resort. I do not advocate the operation as a regular procedure. I have been much interested during the past three years in the application of carbon dioxid ice. I evert the lid so as to expose the retrotarsal fold, and make a rather light application, about two or three seconds, until the lid turns white. I freeze both lids. There is some virtue in it; I cannot tell you yet how much. I would recommend that if you have a case of trachoma that is not getting along well, freeze the conjunctiva lightly, repeat in a month and again in another month. I habitually freeze these small tendinous pterygiums with carbon dioxid ice. In all probability it obliterates the old capillary circulation, because immediately after the freezing a better condition of the conjunctiva and very much better vision is noted.

Dr. Edward H. Cary, Dallas, Texas: This operation is useful in all cases of trachoma after the first stage. It is good enough for all of the pathologic changes which take place from the time enough pathology is present to produce pannus and small ulcerations. In the first stage of trachoma you would not think of using this procedure. The question of resecting the tarsus is left for the last stage, and is not to be thought of in connection with these intervening conditions, which you can treat with a simpler or a better method of operation than this, leaving the lid absolutely normal, so that there is no evidence after a few weeks of having operated at all.

RELATIVE DIGESTIBILITY OF MAIZE OIL (CORN OIL), COTTONSEED OIL AND LARD*

ELBERT W. ROCKWOOD, M.D.
AND
P. B. SIVICKES
IOWA CITY, IOWA

At a time when the value and necessity of fats in foods are recognized as never before, the determination of the digestibility of those from new or little used, although abundant, sources is both interesting and important. Of as great interest is the comparison of their utilization with that of the fats for which they can be substituted. In this country a potentially rich source of edible oil is the germ of maize or Indian corn, which is separated from the rest of the kernel in the starch-making process.

Maize oil, or corn oil, has within the last few years been put on the market in increasing quantities. It is sometimes sold under these names, sometimes under trade names[1] that do not clearly indicate its source. The results of experiments here reported show the digestibility by dogs of corn oil compared with that of lard and cottonseed oil, for which it is chiefly substituted. It is probable that the digestibility by man would not differ much from these figures.

The dogs represented three different types. One was normal in development and vigor, a second was in a subnormal condition, and the third was excessively fat. All were adult females. As their weight did not differ materially, the same ration was used for all. It consisted of 40 gm. of cracker meal, 10 gm. of bone ash and 155 gm. of chopped lean beef, freed from visible fat as much as possible. In a fore period, no fat was given and the ether-soluble material was determined in the feces and regarded as the "normal" output. In the fat periods, 40 gm. of the fat tested were included daily.

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* From the Laboratory of Physiological Chemistry, University of Iowa.

[1] The chief one of these oils sold under trade names, in the Middle West, is Mazola.

The feces were marked off by lampblack, dried after addition of alcohol-acid, and extracted with dry ether in the usual manner.

Dog 1 was very vigorous and healthy. The weight before the tests was 6.1 kg., and after the tests, 6.8 kg.

TABLE 1.—TESTS WITH DOG 1

Fat Used	Length of Period, Days	Total Fat Excreted per Day, "Normal" Fat, Gm.	Excreted Fat, Less "Normal" Fat, Gm.	Percentage Total Fat		Percentage Total Fat Less "Normal" Fat	
				In Feces	Absorbed	In Feces	Absorbed
None	5	.282					
Cottonseed oil	3	.936	.654	2.3	97.7	1.6	98.4
Corn oil	3	1.108	.826	2.8	98.2	2.0	98.0
Lard	3	1.828	1.546	4.6	95.4	3.9	96.1
Corn oil	3	.877	.595	2.2	97.8	1.5	98.5

Dog 2 was in very poor physical condition, lean and mangy, becoming worse toward the end of the experiment. The weight before the tests was 5 kg., and after the tests, 4.75 kg.

TABLE 2.—TESTS WITH DOG 2

Fat Used	Length of Period, Days	Total Fat Excreted per Day, "Normal" Fat, Gm.	Excreted Fat, Less "Normal" Fat, Gm.	Percentage Total Fat		Percentage Total Fat Less "Normal" Fat	
				In Feces	Absorbed	In Feces	Absorbed
None	3	.632					
Cottonseed oil	3	1.101	.468	2.8	97.2	1.2	98.8
Corn oil	3	.937	.305	2.3	97.7	0.8	99.2
Lard	4	1.168	.536	2.9	97.1	1.3	98.7

Dog 3 was healthy, but very fat, slow and sluggish. The weight before the tests was 6.15 kg., and after the tests, 5.9 kg.

TABLE 3.—TESTS WITH DOG 3

Fat Used	Length of Period, Days	Total Fat Excreted per Day, "Normal" Fat, Gm.	Excreted Fat, Less "Normal" Fat, Gm.	Percentage Total Fat		Percentage Total Fat Less "Normal" Fat	
				In Feces	Absorbed	In Feces	Absorbed
None	3	.951					
Cottonseed oil	3	1.310	.359	3.4	96.6	0.9	99.1
Corn oil	3	1.029	.068	2.6	97.4	0.2	99.8
Lard	3	1.502	.551	3.8	96.2	1.4	98.6

If we take as a measure of nonmetabolized fat the amount that is excreted in the feces minus the amount that the dogs eliminated when they were on practically a fat-free diet, we find the percentage of fats metabolized, as given in Table 4.

TABLE 4.—PERCENTAGES OF FATS METABOLIZED

	Corn Oil	Cottonseed Oil	Lard
Dog 1	98.0 98.5	98.4	96.1
Dog 2	99.2	98.8	98.6
Dog 3	99.8	99.1	98.6
Mean	98.9	98.8	97.8

If we take the total amount of fat fed as the basis, neglecting that of the feces on the basic ration, the digestibility will appear somewhat less, but the relative digestibility will be the same. The difference in melting points may be the important factor in affecting this.

Other experiments, which need not be detailed here, show that corn oil can be well substituted for other animal and vegetable oils in salads and for "shortening" in cooking wheat foods.

Clinical Notes, Suggestions, and New Instruments

UNUSUAL CASE OF UMBILICAL HERNIA: RUPTURE OF SKIN

W. J. McGrath, M.D., Elkader, Iowa

Mrs. M., aged 78, whose family history was negative, had always been fairly well except for an umbilical hernia, beginning about forty years before, which had become quite large recently. The patient strained while at stool, causing a complete tear of the hernial coverings, including the skin, permitting 15 feet of the intestine and a large part of the omentum to escape from the abdomen.

The patient was seen shortly after the accident by Drs. Kriebs and Thine. No attempt was made at this time to replace the herniated intestine and omentum, but the patient was given morphin hypodermically, and the mass was wrapped in gauze wet with physiologic sodium chlorid solution.

About four hours elapsed between the time of the accident and the time I saw the patient. She was immediately placed on a kitchen table, and under light ether anesthesia the abdominal tear and the hernial ring were enlarged, the extruded intestine was replaced in the abdomen, and after the loosening of extensive adhesions and the removal of large shreds of torn omentum, the wound was closed. The patient was given 3 pints of physiologic sodium chlorid solution by hypodermoclysis before leaving the table. Recovery has been gradual but uneventful.

BACTERIAL TOXIN AS A CAUSE OF RETINAL HEMORRHAGE

Arthur S. Tenner, M.D., New York

In a recent article,[1] Dr. Lewis of Buffalo called attention to the obscure etiology of retinal hemorrhage and set forth a new conception, namely, that there occurs in these cases absorption into the blood of a soluble protein poison, usually given off from a focal infection, which has a solvent effect on the intercellular cement substance of the cell wall, and that the hemorrhage is not due to alteration of the blood pressure but to local lysis in the wall itself.

Even if no confirmatory pathologic evidence is presented, this theory is worthy of consideration. The ophthalmologist is often at a loss to assign any cause to his case of retinal hemorrhage.[2] When high blood pressure, arterial sclerosis or constitutional disease coexist, he has been content to attribute the hemorrhage to one of these, without further inquiry as to their mode of action. I am convinced that retinal hemorrhage is not dependent on blood pressure. I am not ready, however, to designate, as Dr. Lewis does, diabetes, arteriosclerosis and nephritis merely as associated conditions. They may not always be the active factors, but it is premature to exclude them entirely from the etiologic list. In the subjoined case, all such conditions were carefully excluded and the only seemingly possible factor in producing the hemorrhage was a focal infection, yet the case differs decidedly from Lewis' cases in that the active organism was a nonhemolizing streptococcus, from which could not occur the solvent action and the local lysis in the cell wall of which he speaks.

REPORT OF CASE

J. J., man, aged 54, referred to me at the Mount Sinai Hospital Dispensary by Dr. Joseph Davidson, June 17, 1918, for headache and poor vision, while in apparently the best of health, had suddenly become blind in the right eye, one week before. He had immediately visited one of the largest eye clinics in this city, where he had been told that a hemorrhage had taken place in his eye and he should put himself in the hands of an internist. This advice was followed, but the internist failed to find any ailment. The urine and the Wassermann reaction were negative. The systolic blood pressure was 110, and the diastolic 65. When I examined him, the right eye showed a recent preretinal hemorrhage, about half as large as the disk, in the region of the macula. The retina was edematous. The vessels showed no arteriosclerosis. The patient was able to count fingers at 18 inches. The left eye was normal in every respect.

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[1] Lewis, F. P.: A Bacterial Toxin as the Cause of Retinal Hemorrhage, The Journal A. M. A., June 15, 1918, p. 1813.

[2] Fuchs: Ophthalmology, Ed. 5, p. 573, Note by Duane.

A search was then made for an infective focus. The rhinologist pronounced the sinuses negative. The mouth contained numerous decayed teeth, and there was a well marked pyorrhea alveolaris. Five teeth were extracted. The services of Dr. Harry Goldberg, dentist of the hospital, were then enlisted, and he and Dr. Vorhaus, pathologist, were successful in obtaining from an alveolar pus pocket a pure culture of a nonhemolytic streptococcus. A vaccine was made and administered to the patient. Eight weeks after the onset, six inoculations having been given, the clot had been completely absorbed and the vision was 20/20.

COMMENT

The points of this case are the absence of constitutional disease, the low blood pressure, and the presence of a pus focus, with the *Streptococcus anhemolyticus (nonhemolyticus)* as the active organism.

Preretinal hemorrhages are usually absorbed without injuring the retina permanently, in which case, vision is restored. Therefore I do not wish to lay any stress on the curative effects of the autogenous vaccine; but the rapid clearing of the retina and absorption of the clot, immediately subsequent to the inoculations, was nevertheless rather striking.

120 West Eighty-Sixth Street.

LUDWIG'S ANGINA: REPORT OF A CASE

H. T. Miller, M.D., Springfield, Ohio

An examination of textbooks and a review of the recent literature on Ludwig's angina show that the disease is not a common one, and that it is still usually regarded as fatal.

While there may be nothing unusual about this case otherwise, it is of decided interest that early recognition of the disease promptly followed by operation brought it to a safe issue.

I should not have recognized the disease so quickly had I not had the privilege of seeing a case of Ludwig's angina while on duty at the base hospital at Camp Greene, N. C. In this particular case the disease had advanced to such a degree that death immediately followed the operation. A postmortem showed the tongue, pharynx, larynx and trachea edematous and greatly congested.

In the present case the patient was seen on the fourth day of the disease. The tongue was quite swollen and pressed the mouth widely open; the submaxillary regions were edematous and greatly infiltrated so that the outline of the lower jaw was obliterated; the cervical region down to the clavicle and sternum was edematous.

The patient was operated on the day following his entrance into the hospital. As he was unable to lie down he was placed on the operating table in a sitting posture. Under unsatisfactory local anesthesia the low operation for tracheotomy was done. It was found necessary to cut through about 2 inches of edematous tissue before the trachea was reached. This gave immediate relief to the distressingly difficult breathing. Incisions on both sides of the inframaxillary regions were made extending from the angle of the jaw down to the hyoid bone. This step was followed by blunt dissection to deeper structures under the tongue. From these incisions only serum and dark blood escaped. On the fourth day there was a free discharge of pus, relieving all the distressing symptoms of pressure. Thereupon recovery was rapid and uneventful.

I feel confident that the successful issue of the case was due to the early recognition of the disease promptly followed by operation.

METHOD FOR PREPARING THE EOSINATE OF METHYLENE BLUE AND METHOD FOR STAINING

Foster A. Beck, M.D. (Windgap, Pa.)
First Lieutenant, M. C., U. S. Army; Chief of Laboratory, Post Hospital, Aeronautical General Supply Depot and Concentration Camp
Garden City, L. I., N. Y.

The length of time and the complicated technic, as formerly required for preparation of the eosinate of methylene blue, led me to devise a method by which this stain may be prepared ready for use in less than an hour.

The stain depends on the formation of methylene azure and methylene violet in the alkaline methylic alcohol eosin methylene blue solution. The eosinates of methylene azure, methylene violet and methylene blue are dissolved in the methylic alcohol, and the water-soluble products are precipitated and removed by filtration. The materials employed and the quantities are:

Reagent methylic alcohol (Merck)	95.000 c.c.
Tenth normal sodium hydroxid V. S.	5.000 c.c.
Eosin yellowish (water-soluble)	0.470 mg.
Methylene blue	0.400 mg.

The methylic alcohol is put into a 6-ounce bottle, the sodium hydroxid volumetric solution is added, and the two are mixed. To this solution the eosin is added and dissolved. As soon as the eosin is dissolved, the methylene blue is added, and the bottle shaken for thirty minutes. After filtration, the filtrate is put into a glass-stoppered bottle and is then ready for use. It is essential that the weights and measures be accurate. A buret should be used to measure the alcohol and sodium hydroxid volumetric solution.

METHOD OF STAINING BLOOD FILMS

1. The films should be made thin and even, and dried in the air. They should be protected from dust and dirt.
2. The dry film preparation is covered with the stain for one minute.
3. Tap water (distilled or rain water may be used) is added to the stain until the slide will hold no more without overflowing. The drops of water should be added rapidly.
4. At the end of two minutes from the beginning, the stain is flushed off with water, and the film is washed until it has a pinkish tint.
5. For making a differential leukocyte count after staining the specimen I shake off the excess of water, dry the undersurface of the slide with a towel, and make the count with the low or high power dry lens. The water on the stained surface makes an excellent refractive medium. The end of the lens should never be allowed to come in contact with the water.
6. For studying the minute structure of the erythrocytes, leukocytes and examining for malarial parasites, the specimen should be permitted to dry in the air or blotted dry with filter paper and examined with oil immersion.

Red cells are light rose, neutrophil granules a darker shade of rose, nuclei various shades of blue, eosinophil granules bright red, blood platelets blue, and lymphocytes blue. In malaria parasites the cytoplasm is blue, the granules dark blue, and the chromatin red.

For staining pus, spinal fluid for the meningococcus, throat smears, sputum, and smears made from cultures, one should proceed as described above.

In pus and epithelial cells the protoplasm stains a light shade of rose, and the nucleus blue. The gonococcus or other organisms within the pus cell stain dark blue, and the extracellular organisms various shades of blue. A distinct contrast is noticed between the organism and the cell.

ADVANTAGES

1. The method for preparing the eosinate of methylene blue as described saves time, requires less technic, and can be prepared by any laboratory technician.
2. Less time is required to stain the specimen, the old method requiring from three to ten minutes.
3. Tap water may be used instead of distilled or rain water.
4. For bacteriologic examinations this stain may be used instead of alkaline methylene blue.
5. For bacteriologic work heat is not necessary to fix the specimen.

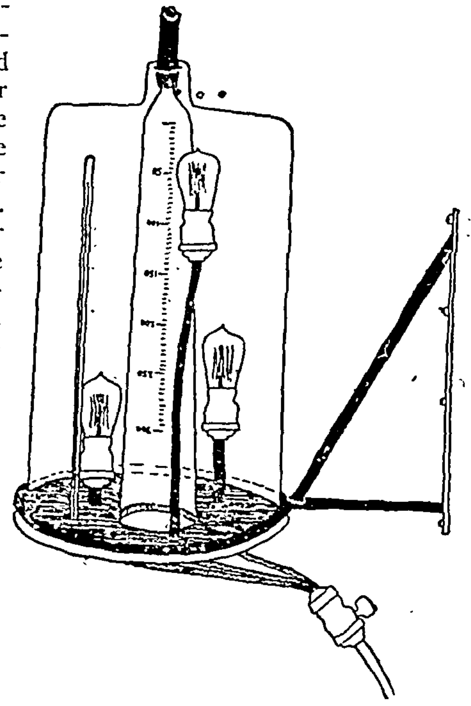
APPARATUS FOR ADMINISTERING ARSPHENAMIN AT TEMPERATURE OF BLOOD *

S. R. Thompson, M.D., Charlotte, N. C.

This apparatus was suggested on account of severe reaction and sometimes death after the administration of arsphenamin intravenously. Physicians are realizing more and more the necessity of introducing solutions that will be free from all possible sources of irritation. The reaction called "chills and fever" following intravenous injections of arsphenamin is due, we believe, to injecting arsphenamin intravenously below the normal temperature of the blood.

In giving ten or more doses of arsphenamin within from one to four hours we discovered that the patients receiving treatment when the solution was hot, or at the temperature of the blood, had no reaction or chill. Those receiving the last doses of the solution, which had cooled below the normal temperature of the blood, nearly always had more or less reaction. We have given more than a thousand doses by this method in dosages of from 0.3 to 0.6 gm. Solutions of from 30 to 150 c.c. have been given with chills or severe reaction in less than 5 per cent. of the cases.

The apparatus consists of a glass container practically closed with a wooden cover to prevent the entrance of cold air. In the center is a regular arsphenamin graduate. In the air chamber around this there are three 10 watt incandescent lights and a thermometer, registering in Centigrade and Fahrenheit. The lights may be attached or on separate switches. The rubber tubing, mixing jar, needles, etc., may be of any type desired. These are not included in the illustration. Before the injection is begun the solution in the rubber tube can be brought to the proper temperature by being allowed to run back into the graduate. Solution left in the apparatus will remain at the desired temperature, depending on the number of lights used.



Apparatus for administering arsphenamin at the temperature of the blood.

The simplicity, practicability and economy of this apparatus have commended it to us, and it has become indispensable in our clinic.

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* Presented before the Mecklenburg County Medical Society, May 5, 1918.

* From the Crowell Urological Clinic and United States Public Health Clinic.

Venereal Diseases in Army and Civil Life.—In these five camps (Dix, Lee, Upton, Meade and Pike) there were about nineteen times as many cases contracted before enlistment as afterward. *It is, therefore, the disease contracted by civilians before enlistment, under civil conditions, which is responsible for the disability due to venereal disease in the Army.* To reduce the small amount of venereal disease contracted after enlistment is the problem of the Army. To cut down the vast amount brought in from civilian life is the problem before the state and local health officers throughout the United States. There is no greater or more urgent health problem before them today. To solve the whole problem, the Army and the health officers will need to exercise the closest cooperation.—Major W. A. Sawyer, M. C., U. S. Army, *Am. Jour. Pub. Health*, September, 1918.

Military Medicine and Surgery

THE EPIDEMIC OF INFLUENZA AT CAMP SHERMAN, OHIO

ALFRED FRIEDLANDER, M.D. (Cincinnati)
Major, M. C., U. S. Army; Chief of Medical Service
CAREY P. McCORD, M.D. (Detroit)
Major, M. C., U. S. Army; Chief of Laboratory Service
FRANK J. SLADEN, M.D. (Detroit)
Captain, M. C., U. S. Army; Assistant Chief of Medical Service
AND
GEORGE W. WHEELER, M.D. (New York)
Lieutenant, M. C., U. S. Army; Bacteriologist, Laboratory Service
CAMP SHERMAN, CHILLICOTHE, OHIO

At the time the prevailing epidemic of influenza was at its height in New England, numerous cases of coryza and bronchitis appeared at Camp Sherman. The picture was not characteristic of influenza, but the condition was so frequently noticed among the patients of the base hospital that isolation was instituted and special wards set aside for this purpose. The absence of the usual features of influenza led to considerable comment as to the justification of such a *diagnosis.* This uncertainty was abruptly and definitely terminated by the sudden appearance of large numbers of patients exhibiting characteristics of clinical influenza. Unlike the simple syndrome of the earlier cases, the new group was featured by sharper onset, prostration, aches and pains, and high temperature. By September 24 the transition had occurred, and this date marks the beginning of a definite epidemic of clinical influenza.

TABLE 1.—PNEUMONIA AT CAMP SHERMAN *

Date	Admissions	Pneumonia	Deaths
Sept. 24	80	0	0
Sept. 25	102	0	0
Sept. 26	216	8	1
Sept. 27	321	10	1
Sept. 28	314	9	3
Sept. 29	303	27	2
Sept. 30	732	97	7
Oct. 1	1,157	26*	15
Oct. 2	644	278	22
Oct. 3	633	55*	45
Oct. 4	957	461	52
Oct. 5	711	214	104
Oct. 6	449	152	119
Oct. 7	444	160	110
Oct. 8	169	73*	125
Oct. 9	81	220	97
Oct. 10	227	160	86
Oct. 11	78	51	53
Total	7,618	2,001	842

* Marked irregularity exists in these figures, but the variations in the daily occurrence of pneumonia are apparent and not real, being due to the system of reporting diagnoses.

At this time the population of the camp was 33,044. Of this number, 24,513 were white, and 8,531 were colored. The larger numbers of these men were inducted into military service from Ohio, but smaller groups from Pennsylvania, West Virginia, Alabama, Tennessee and Louisiana. Of the total population, 15,493, or 46.8 per cent., had been in service one month or less. From the nature of the examinations and procedures incidental to induction into service, it followed that these men were more closely and frequently grouped than the other men of the command. An analysis of the first 4,269 cases of influenza reveals that 2,944, or 69 per cent., occurred in men who had been in service one month or less. In other words, two thirds of these cases occurred in a group of 15,493 recent arrivals, comprising less than one half of the camp's population. This analysis also shows that the incidence of the disease decreased with length of residence in camp.

Table 1 shows, day by day, the admissions, the incidence of pneumonia, and subsequent deaths. In this table under "pneumonia" are included, without differentiation, the cases of acute inflammatory pulmonary edema described in the section on "Clinical Manifestations."

In addition to those cases admitted to the base hospital, other cases of influenza to the extent of 3,361 have been reported from the various camp organizations. The addition of this number to those admitted to the base hospital affords a total of 10,979 as the number of individuals affected in this epidemic.

Certain accrued statistics are of significance in relation to the extent of the epidemic (Table 2).

TABLE 2.—EXTENT OF INFLUENZA EPIDEMIC

	Per Cent.
Percentage of camp's population (33,044) affected in epidemic..	33.22
Percentage of camp's population admitted to base hospital (7,618)	23.05
Percentage of total affected developing either pulmonary edema or pneumonia (2,001)	18.22
Percentage of admissions to base hospital presenting or developing either pulmonary edema or pneumonia	27.57
Mortality in total number affected	7.66
Mortality among patients developing either pulmonary edema or pneumonia	42.07
Mortality in camp's population for period of epidemic.........	2.55

BACTERIOLOGY

During all stages of the epidemic, examinations have been made to establish the identity of the responsible organism. This organism has been sought in materials obtained from:

1. Smears and cultures from sputum of influenza patients.
2. Cultures from swabbings of throat and nasopharynx of influenza patients and immediate contacts.
3. Cultures from sputum of patients after development of pneumonia.
4. Blood cultures from patients after development of pneumonia.
5. Postmortem cultures from heart's blood, lung exudate, pleural fluid, pericardial fluid, spleen and kidneys.

1. Smears and cultures of sputum of influenza patients have uniformly exhibited the pneumococcus as the predominating organism. On typing, these pneumococci conformed to the following groups: Type IV, 80 per cent.; Type III, 18 per cent; Type II A, 2 per cent. One culture containing the pneumococcus as the predominating organism presented two colonies of Pfeiffer's organism. Certain immediate contacts with influenza patients were examined bacteriologically at a time when free from any manifestations of disease. Seventy-six per cent. exhibited pneumococci. Such of these as were typed were uniformly Type IV.

2. Cultures from swabbings of the throat and nasopharynx of influenza patients exhibited pneumococci in 54 per cent. and hemolytic streptococci in 4 per cent. of all examined. In none of these cases were influenza bacilli demonstrated.

3. On the detection of a complicating pneumonia, cultures were again made of the sputum. Regularly the pneumococcus was demonstrated with 80 per cent. characteristic of Type IV. Cultural conditions were suitable for the propagation of *Bacillus influenzae*, but in no instance was it detected.

4. Blood cultures were obtained from 100 patients after the recognition of a complicating pneumonia. In 6 per cent. of these cultures, growths were obtained. All were identified as pneumococcus Type IV. No other organisms have been detected in blood cultures, the remaining 94 per cent. being sterile.

5. Cultures obtained at necropsy from various thoracic and abdominal tissues and fluids indicated the presence of the pneumococcus as the dominating organism in 53.3 per cent of the bodies examined postmortem, while in 46.7 per cent. *Streptococcus hemolyticus* was the outstanding organism. The pneumococcus on being typed was classified as 75 per cent. Group IV and 25 per cent. Group III. In only one instance were both pneumococci and hemolytic streptococci encountered in large numbers in the same case. In this instance Group IV pneumococci and hemolytic streptococci were demonstrated in all cultures taken, heart's blood, lung exudate, pleural fluid, pericardial fluid, spleen and kidney. In conjunction with the Group IV pneumococcus isolated from the lung exudate of one body, numerous colonies of the *Bacillus influenzae* (Pfeiffer) were detected.

The persistent absence of influenza bacilli in the diverse materials examined militates against attributing this epidemic to the Pfeiffer organism. Cultural conditions favorable to the growth of influenza bacilli have been maintained. However, within the period covered by this report, this organism was exhibited in only two individuals. More consistently have the cultures yielded growths of the pneumococcus, to the end that significance is to be attached to the pneumococcus-streptococcus group of organisms as a dynamic factor in this epidemic. It may not be maintained at the present time that the pneumococcus has been the specific agent causing the epidemic, as prior to the epidemic a high percentage of this camp's population harbored Group IV pneumococci. The nature of the clinical manifestations and the processes evidenced at necropsy strongly bear out the contention that some member of the pneumococcus group has rapidly been distributed among the individuals of the camp, with activities of a character and severity not heretofore observed in this camp.

CLINICAL MANIFESTATIONS

The clinical manifestations observed necessitate a grouping into two form types. As already intimated, this epidemic was introduced by an atypical clinical picture characterized by mildness (Type I). The rapid spread gave a serious aspect to this simple catarrhal infection of the respiratory tract. The clinical features were fever, coryza, conjunctivitis, dry hacking cough, little or no leukocytosis and no noteworthy chest findings.

This type of infection was first noted among patients already in the hospital. It probably occurred also in the camp, as within a few days increasing numbers of such admissions required special provisions for their separate care.

The absence of prostration and aches and pains led some to regard the diagnosis of influenza as unwarranted. Gradually, however, the type changed, and within five days there was a full realization that an epidemic of influenza was in force. The transition seemed rapid, once it started, and the momentum the epidemic acquired was appalling. This second type (Type II), recognized as true influenza, was characterized by sharper onset, chills, quicker and higher rise of temperature, frequent epistaxis, distressing aches and pains, increasing prostration, red, glazed pharynx without tonsillitis, and an increase in the subjective manifestations of bronchitis, but still without noteworthy physical findings in the chest. Some cases of gastro-enteritis and a few of the so-called nervous form of influenza were observed.

At once two types of more seriously ill patients demanded attention. In the one (Type III), respiratory distress was marked, with meager signs in the lungs. At the most, suppressed breath sounds with fine râles in the lower axillary spaces were found. There was no local change in expansion, vocal fremitus, percussion, or transmission of whispered or spoken voice sounds. Such signs did not necessarily progress to pneumonic consolidation. The other severely ill type, at this stage (Type IV), was the outstanding clinical feature of the epidemic. This formed a distinct clinical picture not emphasized in any published reports. During the height of the epidemic, many patients exhibited on admission a strikingly intense cyanosis, especially noticeable in the lips. This was not the dusky pallid blueness to which one is accustomed in a failing pneumonia, but rather the deep blueness characteristic of methemoglobinemia. These patients had high fever, intense air hunger, complete exhaustion and prostration. They were semicomatose or in a low, muttering delirium. The lungs contained diffuse bubbling râles, increasing rapidly in number and extent, in addition to subcrepitant râles. The course was rapid to death in twenty-four or forty-eight hours. The patient was practically a drowning man. The picture resembled an acutely progressive pulmonary edema. With the increasing moisture in the lungs, however, there was no sign of myocardial insufficiency or dilatation. The pulse was fair in volume and tension. Cardiac outlines were unchanged. There were neither enlargement of the liver, nor serous effusions or edema in other portions of the body.

These clinical observations were supported by the necropsy findings in these cases.

At necropsy, those dead of the condition designated clinically as an acute inflammatory pulmonary edema presented lungs having one or more lobes dark red or bluish gray, firm and rounded, with no tendency to collapse. The pleural surface was smooth and glistening, not thickened, without exudate. The lung tissue pitted deeply on pressure. The process was essentially massive and confluent. There was no evidence of a lobular distribution. Section through an involved lobe revealed an extreme grade of congestion and edema. Immediately on section there was a free outflow of thin, dark red fluid from the cut surface. From 150 to 200 c.c. of this fluid were measured from a single section across the lung in the different cases. The cut surface was somewhat rough but not granular; there was no evidence of fibrinous exudation. Stained films of this thin fluid showed large numbers of red cells, very few leukocytes and epithelial cells, and many gram-positive cocci in pairs and short chains. The appearance of the bronchi was the same as that described in the general section on pathology below. The pericardium was normal throughout. The pericardial cavity contained from 25 to 30 c.c. of clear, straw colored fluid. No portion of the heart evidenced any enlargement. The myocardium presented normal color and consistency.

These cases occurred frequently during the first three days and persisted to a less degree throughout. They diminished as bronchopneumonia increased.

The condition was suggestive of that occurring after exposure to chlorin gas. In many, the serous fluid almost poured from mouth and nostrils on change of position, or bubbled out in the distressing efforts to breathe. The man struggled against asphyxia with all the accessory muscles of respiration. Some of the patients retained consciousness for a remarkable period, suffering intensely. In a word, it was as if the severity of the irritation in the respiratory tract was so caustic as to produce an immediate reaction, serous in character. It was essentially an acute inflammatory pulmonary edema.

COMPLICATIONS

The complication naturally to be anticipated in an epidemic of the respiratory type of influenza was pneumonia. By October 2, the pneumonias were so numerous as to occupy the entire bed capacity of the base hospital. Arrangements were then in force to admit influenza patients to an improvised annex and only pneumonia patients to the hospital. Shortly thereafter the available hospital beds were filled, and it was necessary to place 383 pneumonia patients in a special section of the annex. Secondarily the epidemic resolved itself into a pneumonia rather than an influenza problem.

A careful estimation of the circumstances would lead one to expect a secondary bronchopneumonia of virulent character, in an already acutely prostrated individual. This was the picture: The early cases in particular showed low leukocyte counts, low fever, and rapid pulse and respirations. The asthenia incident to influenza was so profound as to greatly diminish the resistance to the pneumonia.

A striking feature at this stage was the absence of physical signs to localize the particular area of involvement. A peculiar tympany with crepitant râles and distant bronchovesicular breath sounds was frequently all that was found. This was explained at necropsy by finding the pneumonic exudate in lobular distribution mainly about the hilum of the lung and progressively diminishing toward apex and base.

In the cases enduring longer than the average, as well as later in the epidemic, impairment of percussion was more frequently found, in varying superficial areas. With this were bronchial breathing and the other signs indicative of outspoken superficial consolidation. In many of these cases the consolidation was lobar in distribution, often distinguishable with difficulty from acute lobar pneumonia. In some a clearing by crisis occurred. However, as noted below, the pathology of the fatal cases of this type was distinctly different from that of acute lobar pneumonia.

Many of these patients lay in muttering delirium which persisted after the temperature was normal. This could be explained by the asthenia, although there were several instances of serous meningitis. Only once did secondary pneumococcal meningitis complicate the picture. Acute hemorrhagic nephritis was a frequent clinical observation.

Five cases developed subcutaneous emphysema without demonstrable pneumothorax. This was distributed over chest wall, neck and face, although in one case it involved the abdominal wall, scrotum and lower extremities.

Acute fibrinous pleurisy, even pleural pain, was not observed, except in a few instances in the latter days of the epidemic. At the date of writing, one case of empyema had appeared.

The more hopeful cases were frequently characterized by small patches of consolidation which completely cleared often in from ten to twelve hours. This was one of the striking features of the epidemic.

Other than pneumonia, complications to influenza were slight. Profuse epistaxis without nasal ulceration was very frequent at onset, and later acute catarrhal otitis media was common, but fortunately always cleared without perforation of the drum. Hemorrhages into the middle ear and a few instances of acute sinusitis occurred.

PATHOLOGY

The lesions of the lungs associated with the clinical picture of the acute inflammatory pulmonary edema are so pertinent in their relation to that condition that their description has been included in the foregoing description of the clinical manifestations.

In the necropsies of those patients that died of pneumonia the lesions noted in the lungs were those of a confluent bronchopneumonia involving one or more lobes. In the average case more than 50 per cent. of the lung tissue was involved and frequently as much as 90 per cent. The order of frequency of lobe involvement in this confluent pneumonia was right lower, left lower, right upper, left upper, right middle. In addition to this massive confluent process, there were patches affecting only a few lobules scattered throughout the remainder of the lungs, which resembled the ordinary type of bronchopneumonia.

The lobe affected with the confluent pneumonia was rounded, tense and firm, with no tendency to collapse; it pitted on pressure and did not crepitate. The affected lobe, when placed in water, invariably sank. The pleura was smooth and glistening; a few presented a beginning fibrinous exudate. The color of the involved lung in some was a deep red, in others a deep bluish gray, giving the lung a cyanotic appearance. Lobular outlines were indistinct or wholly obliterated. At rare intervals in a confluent involvement, isolated lobules would be unaffected.

On sectioning the lung there occurred an immediate exudation of dark bloody fluid. In those patients characterized clinically as having pulmonary edema, this exudation was profuse to the extent of the spontaneous outflow of from 150 to 200 c.c. of this thin, dark red fluid. The consistency of the lung tissue was that of soft muscle and not friable. On scraping the surface with a knife only a thin bloody exudate was expressed; no air bubbles nor fibrinous plugs. The scraped surface was dull and somewhat rough, but not granular. The color was a deep red, showing in places small areas from 4 to 5 mm. in diameter which were firm in consistency, almost black, and slightly raised above the surrounding tissue. These were noted more frequently adjacent to the smaller bronchi. The blood vessels of the affected lobe were dilated and contained dark fluid blood.

In the discrete lobular type of involvement, the affected lobules were distinctly raised above the surrounding lung tissue and were rather firm and resistant to the touch. The color, consistency and appearance on cut section were similar to those of the confluent lesion described above, excepting that the amount of fluid exudate was much less. These discrete areas were more numerous near the hilum of the lung and diminished in number and size toward the apex and base.

The portions of the lungs not affected by the pneumonic process showed varying degrees of congestion and edema. At times the amount of congestion was surprisingly small, even in those portions of the lung that were contiguous to the involved areas.

The bronchi contained thin, frothy, blood-tinged fluid, no mucus, no purulent material. The mucous membrane of the trachea and larger bronchi was swollen, causing distinct narrowing of the lumen. The color was pink, deep red or purplish, the small blood vessels showing intense injection. The smaller bronchi were dilated, the walls thin, and the swelling and injection of vessels not so prominent as in the larger tubes.

Most cases showed a complete absence of pleural involvement, and no excess of fluid, nor adhesions. In one case the right pleural cavity was filled with thin pus from which a pure culture of pneumococcus was obtained.

The pericardium presented no indication of involvement. The pericardial cavity contained from 15 to 60 c.c. of clear straw-colored fluid at times slightly greenish. The heart usually presented trivial enlargement on the right side; the right auricle was distended with blood; the right ventricle presented moderate dilatation; the myocardium was red or brownish red, bled easily and was usually of firm consistency. On occasion the right ventricular wall was moderately thin and flabby. The valves and cavities of the heart presented no characteristic findings.

The liver and spleen presented varying degrees of congestion, but were without other significant findings. The kidneys in a number of necropsies exhibited a beginning acute hemorrhagic nephritis.

Other accrued data from these necropsies of a general nature have been omitted as not pertinent to this report. This report is based on the first twenty necropsies of this epidemic. The early ones of the series were uniformly on deaths from pulmonary edema, while the latter half of the series predominately conformed to the confluent bronchopneumonia type.

THERAPY

1. *Influenza.*—Great care was taken to avoid undue exposure in these cases. Rest in bed, indoors, free purgation, gargles, acetylsalicylic acid and Dover's powders (pulvis ipecacuanhae et opii, U. S. P.) constituted the general plan of treatment. It is important to emphasize the fact that many of these patients, after two or three days of normal temperature, and during apparent convalescence, developed bronchopneumonia. This led us to take great care, retaining the patients in the hospital for seven days after defervescence, with frequent periodic chest examinations.

2. *Acute Inflammatory Pulmonary Edema.*—This presented a new problem in therapy. The principles of treatment employed in pulmonary edema incident to dilatation of the heart, though seemingly not indicated by the condition in question, were employed. Digitalis, a soluble caffein salt, morphin and venesection were without significant value. This was equally true of large doses of atropin. Oxygen was of temporary value. Posture accomplished drainage but did not influence the end-result. Pituitary solution, hypodermically, was suggested by the similarity of this condi-

tion to the results of gassing. No benefits were gained by its use. This general lack of response to treatment was to be expected, however, when one realizes that the patient in acute inflammatory pulmonary edema is constantly exposed to the respiratory irritant. The mechanical emptying of the bronchi by vomiting induced by ipecac was regarded as contraindicated on account of its heroic character. This condition must be regarded as the most fulminant type of respiratory influenza, against which no especial measure was of avail.

3. *Secondary Acute Bronchopneumonia.*—The usual recommendation as to diet, fresh air, rest, mild purgation and elimination were issued to all ward surgeons. All cases were digitalized, and reliance placed on soluble caffein salt for quick stimulation. Strychnin in large doses hypodermically had a distinct value in the existing asthenia.

GENERAL MEASURES

When it became evident that the epidemic would be apt to assume large proportions, the camp commander appointed a board (of which two of us were members) to formulate provisions for emergency camp sanitation and provide adequate facilities for handling large numbers of patients. This board had plenary powers. Its recommendations were at once put into effect by a series of orders issued by the camp commander.

The more important recommendations of the board may be thus summarized:

The camp was quarantined. Soldiers were not permitted to leave camp, and only relatives of very ill patients were allowed to enter.

Theaters, post exchanges, Y. M. C. A. buildings, etc., were closed, and congregating of soldiers within doors was forbidden.

All barracks were thoroughly cleaned and all overcrowding of well soldiers eliminated. A considerable number of the command was put under canvas.

Continuous ventilation of barracks was insisted on, responsibility for proper execution of orders being placed on organization commanders.

All tents were ordered furled during the day.

All bedding and clothing was given a daily sunning and airing, weather permitting.

All members of the command were required to gargle twice daily with a 1 : 10,000 quinin gargle. This was done because routine throat cultures early in the epidemic had shown that the pneumococcus was consistently present in large numbers in most of the throats examined. The pneumococcidal value of quinin in weak solution is thoroughly established.

Dry sweeping of barracks was forbidden, damp mops being used.

All roads in and around the camp were sprinkled twice daily to keep down dust.

An entire section of camp was at once emptied of troops, and the barracks thus obtained were fitted up as hospital wards. In all, 5,200 beds were thus provided. This annex to the base hospital was put under immediate charge of the commanding officer of Evacuation Hospital No. 28, which was mobilizing at this camp. The personnel of this organization was augmented by sending medical officers from line organizations and the base hospital. The annex was under general control of the officials of the base hospital.

The base hospital itself was given over almost entirely to the care of pneumonia patients. All porches were filled with beds, without undue crowding, and the provisions of 1,000 cubic feet of air in wards rigidly adhered to.

The base hospital thus equipped had a capacity of 2,400 beds, of which 2,000 were available for pneumonia patients. Sheet cubicling of wards and porches was systematically carried out.

The general plan contemplated the using of the annex for the milder cases, transferring all pneumonia patients, known or suspect, back to the base hospital. At the height of the epidemic this was found to be impracticable, and three barracks (300 bed capacity) were set aside in the annex for the handling of pneumonia patients. To these barracks special medical officers and trained nurses were assigned.

In the base hospital proper, one ward surgeon was assigned to each pneumonia ward. The emergency necessitated the use of many medical officers in a field far removed from their usual spheres of activity. The system of ward supervisors, general and special consultants as devised, made it possible to secure for the patients the maximum amount of proper medical treatment.

SUMMARY

In this epidemic of clinical influenza occurring in an Army camp with a population of 33,044 soldiers, 10,979 men (33.22 per cent.) contracted the disease. Secondary to the influenza there occurred a high incidence of pneumonia, affecting 2,001 (18.22 per cent.).

The outstanding features of the epidemic were:

1. Of the camp's population (33,044), 15,493 (46.8 per cent.) were men who had been inducted into service within the previous month. This group of men contributed 2,944 (69 per cent.) of the first 4,269 cases occurring in the camp. That is, two thirds of this group of cases occurred from a group of men comprising less than half the camp's population. The incidence of the disease decreased with the length of residence in camp.

2. The severity of the infection occasioned a high mortality. During the epidemic, 842 deaths occurred, 7.66 per cent. of the total number affected in the epidemic and 2.55 per cent. of the camp's population. All deaths were attributable to acute inflammatory pulmonary edema or to pneumonia.

3. *Bacillus influenzae* (Pfeiffer) has not been demonstrated as the causative organism. The frequency of its detection has not exceeded the frequency of its existence under normal conditions.

4. Pneumococcus, chiefly Type IV, has been the predominating organism. From the sputum the pneumococcus has been recovered uniformly. In necropsies the pneumococcus was detected in 53 per cent. of instances. The hemolytic streptococcus occurred in 47 per cent. of thoracic exudates.

5. The clinical manifestations necessitate a division into four types, which represent a progression in severity. Type I, characterized by coryza and bronchitis, was the forerunner of the true influenza (Type II). Type III comprised a group with subjective signs without demonstrable objective evidence of pneumonia. Type IV, acute inflammatory pulmonary edema, represented the most fulminant type of respiratory influenza.

6. The intense asthenia produced by the influenza influenced both the picture and the outcome of the secondary bronchopneumonia.

SCABIES IN MILITARY AND CIVIL LIFE

ITS DIFFERENTIATION, COMPLICATIONS AND TREATMENT

FRANK CROZER KNOWLES, M.D. (PHILADELPHIA)
Captain, M. R. C., U. S. Army; Dermatologist, U. S. Army Base Hospital No. 10
FRANCE

War is the great teacher of efficiency. The greater the man power that can be kept in the field and the fewer men that have to be sent to the rear for disability, the sooner will victory end this world war. There is probably no greater problem today in the fighting forces in Europe than the group of animal parasitic diseases. It has often been said that intense itching which keeps the patients awake night after night is harder to bear than pain. There seems to be a rather chaotic condition present as to the understanding of the clinical manifestations of scabies, its differentiation from the various forms of pediculosis, its complications and its treatment. The various animal parasitic conditions attacking the skin should be under the care of trained dermatologists rather than being distributed haphazard among all of the general hospitals. If the excellent suggestions typed by Major H. MacCormac, R. A. M. C., were followed minutely, the cure of scabies would be very much hastened.

During the last fifteen years I have personally treated in civil hospital practice, in my various hospital clinics and dermatologic wards of eighty beds, 8,000 cases of scabies. The incidence of this disease has been a little more than 5 per cent. of the total dermatologic cases observed during this time. During our twelve months tenure at this large British general hospital, there have been somewhat more than 2,000 cases treated in the skin department, and of this number over 500 have been scabies. If conditions secondary to scabies, such as furuncles, impetigo, folliculitis, septic sores and so-called inflammation connective tissue (I. C. T.) were included, almost 1,000 more of these cases would be classified under the former heading. In other words, 1,500 of the 2,000 dermatologic cases were either frankly scabies or secondary to scabies.

TABLE 1.—DIFFERENTIATION BETWEEN SCABIES AND PEDICULOSIS CORPORIS

Scabies	Pediculosis Corporis
General in distribution, exclusive of the face and scalp.	General in distribution, exclusive of the face, scalp, hands, feet and the lower arms and the lower legs
Predilection for the webs of fingers, flexure surface of the wrists, penis, flexure surface of extremities, and anterior surface of trunk	Predilection for extensor surface of the upper arms and upper legs, and posterior surface of the trunk, particularly across the shoulder and lower back
Diagnostic sign the "burrow," a minute zigzag line, consisting of alternating blackish and whitish dots, the width of a thin thread, and from the smallest fraction to ⅛ inch in length; itch mite too small to look for; pinpoint in size	Diagnostic sign the pediculus, small pinhead in size, found in the seams of the clothes more frequently than on the body
The eruption we speak of as multiform; papules, vesicles and pustules, boils and large crusts	The eruption consists chiefly of long, linear scratch marks, small punctate hemorrhages and excoriations; not infrequently crusts and boils
Itching severe, usually at night	Itching severe, usually at night

Table 1 will elucidate the differentiation clearly between pediculosis corporis and scabies.

Scabies in military and in civil practice differs considerably, as shown by Table 2

Scabies is readily differentiated from pediculosis, for, in the latter disease, the diagnosis is based on finding the small pinhead-sized ovum ("nit") attached to the hairs in the pubic or axillary regions; in hairy individuals, any hair on the entire surface of the body, exclusive of the scalp, may show this nit. In a recent series of 200 patients minutely examined, pediculosis pubis was present in 190 of the cases.

TABLE 2.—SCABIES IN CIVIL LIFE AND IN MILITARY LIFE

Scabies in Civil Life	Scabies in Military Life
Eruption usually on the lateral aspect and webs of fingers, consisting of pustules and burrows, excepting in those unusually cleanly, in washerwomen, and mechanics who work in oils, greases, graphite, etc.	Hands are involved in but few cases
Penis frequently shows only one or two pustules and burrows and occasionally none	Penis usually shows a marked involvement, numerous pustules and burrows
Complications are absent in most cases	Complications, such as an unusually large number of pustules, boils, impetigo, and the so-called I. C. T. (secondary pustular lesions) are frequently present

METHOD OF TREATING SCABIES

On the first day the patient is given a warm bath with plenty of soap. One rubbing is given with sulphur (precipitated sulphur, 1 dram to the ounce of petrolatum).

On each of the next three days a sulphur rubbing is given.

On the fifth day a warm bath with plenty of soap, and clean clothes, are given.

Thorough and minute examination of the entire body is made to insure that no active disease remains. If active lesions are still present, four more days of sulphur rubbings are given, followed by another warm bath, another careful examination of the skin surface, and clean clothes.

Method of Rubbing.—A noncommissioned officer, orderly or myself is always present as the patient rubs himself or is rubbed. A minimum of fifteen minutes is taken for the rubbing of each patient. The ointment is rubbed in thoroughly on every portion of the entire cutaneous surface, from the collar line downward; not even the smallest part is missed. The ointment is rubbed in with sufficient friction to open up and destroy all of the burrows. A thin coating of this ointment is purposely allowed to remain over the entire skin surface, excepting the face and scalp (areas that are never attacked excepting in breast-fed babies), after the rubbing is completed, so that if any of the acari have escaped they will be suffocated by the sulphur fumes. In addition, when there are a considerable number of pustules and boils present, the areas so involved are bandaged with sulphur ointment after the daily rubbing is completed.

The greatest care is exercised in treating scabies in a separate hut or tent, in the thorough disinfection of all articles of clothing, and in the use of separate baths.

Treatment of the Complications of Scabies.—There is no more efficient remedy for the treatment of all secondary pustular conditions following scabies than ammoniated mercury ointment, from 20 to 40 grains to the ounce of petrolatum. Boils in their incipience are best cured by rubbing in thoroughly each day for ten minutes a 25 per cent. ichthyol ointment; in a later stage they require opening. If boils continue to recur or a large number are present, autogenous vaccines are indicated. Septic ulcer and inflammation connective tissue not infrequently require rest in bed and the local application of ammoniated mercury, 20 grains to the ounce of zinc oxid ointment.

The efficacy of treating scabies, in the method outlined above, is proved not alone by the cure of 8,000 cases in civil practice but by the result obtained in the minute care of the last 150 cases treated in this hospital. Twenty-five per cent. of the latter patients were discharged cured in five days; 50 per cent. in nine days, and 15 per cent. in sixteen days. The remaining 10 per cent. required from three to six weeks. The length of time required in the latter cases was due to the large number and severity of the primary or secondary stayphylococcic lesions, such as boils, impetigo, septic ulcers, folliculitis and inflammation connective tissue.

SUMMARY

1. Scabies should be treated by the routine suggested by the leading dermatologists of Great Britain, France and the United States.
2. Scabies is a greater problem in military than in civil life because of its greater frequency and severity.
3. Scabies is rather atypical in military life because of the comparative freedom of the hands and more marked involvement of the penis.
4. Complications secondary to scabies are much more frequent and markedly more severe in military than in civil practice.
5. A rather prolonged convalescence is observed in approximately 10 per cent. of scabies in military practice.

NEW METHODS FOR BLOOD TRANSFUSION AND SERUM THERAPY

FRANK W. HARTMAN, M.D.
Lieutenant, M. C., U. S. Navy
WASHINGTON, D. C.

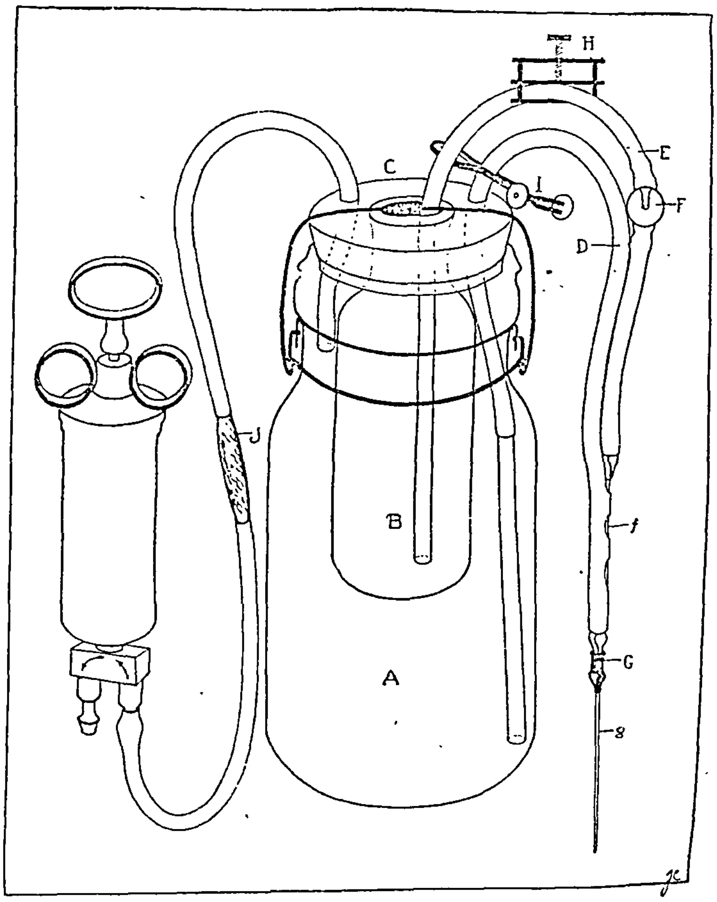
1. A ONE MAN CLOT PROOF TRANSFUSION APPARATUS

In working more or less constantly during the past year with blood transfusion by the citrate method, we have found numerous pitfalls and have tried to simplify the apparatus, eliminating chances of failure.

The principal difficulty has been to use a needle small enough so that one trial is enough to get well into the vein and still prevent clotting long enough to get the desired amount of blood. A 17-gage needle (*g*), preferably platinum, is large enough and causes the donor no marked discomfort. However, as the blood reaches the tube leading to the container there is a slowing of the stream because of the large bore of the tube compared with that of the needle. The walls of this tubing soon become coated with blood cells and a clot filling the lumen results, often before the desired amount of blood is drawn.

With these facts in mind, the apparatus shown in the illustration has been devised, which provides for citrating the blood to any degree, at the needle. Not only does this prevent clotting in the tubing but it also does away with the necessity of agitating the container while the blood is being drawn.

A one or two quart E. Z. seal fruit jar (*A*) is used as a container. A 12-gage rubber stopper (*C*) fits the neck of this jar perfectly. A large hole is bored in the center of the stopper and the neck of a round 4-ounce bottle (*B*) fitted into it. Two small holes are bored through the stopper, one for the pressure tube and a second for the blood-carrying tube. The tubes are passed directly through the stopper because we find sterilization only causes the rubber of the stopper and tube to fuse, whereas glass tubes passed through it sear the surrounding rubber on sterilization, and soon leakage occurs. The bleeding tube (*D*) may be continuous from the needle to the bottom of the container, or may have a glass tube attached inside as illustrated. It is found convenient to have a connection at the distal end of the bleeding tube so that needles may be exchanged at any time. A second needle (*f*) of any size may be used to lead the citrate into the bleeding tube. From this a rubber tube (*E*) passes to the bottom of the citrate bottle (*B*). This tube is broken by a small dropper (*F*), such as is used on the Dakin irrigating apparatus, so that as the flow of citrate is regulated by the stopcock (*H*), we may be certain that the citrate is never completely cut off.



Apparatus for blood transfusion and collection of plasma.

The pressure tube just pierces the stopper, and may be broken by an elongated glass bulb filled with cotton (*J*). With this precaution, suction and pressure may be made by mouth if pump or bulb is not available. An ordinary aspirating pump answers very well.

From 15 to 20 c.c. of 2.5 per cent. sodium citrate solution are placed in the jar (*A*), the citrate bottle (*B*) is filled with the same solution and the stopper loosely fitted to the mouth of the jar. The needle is protected with gauze or cotton and the whole wrapped and sterilized. When the actual operation is undertaken, the stopper is fitted more tightly and clamped down with the lid wire of the jar. The citrate in the jar is forced over to fill the tubes and needle and the tube clamped off at *I*. The apparatus is set on the operating table in the angle between the donor's arm and his body. A prominent vein is chosen and the surrounding skin cleansed with iodin and alcohol. The needle directed toward the body, is plunged into the vein, the clamp (*I*) released, and gentle negative pressure produced in the bottle. A generous flow of citrate is allowed through *F* until the blood is seen to be coming over properly; then the flow is regulated so as to obtain approximately 10 c.c. to each 90 c.c. of blood drawn, erring only in excess. The jar and citrate bottle are graduated with a file or diamond point.

The desired amount of blood being obtained, the pump is reversed, the citrate tube clamped off at *H*, the needle changed, and the blood tube and needle filled with the citrated blood and clamped at *I*. The patient's vein is needled, and after release of the clamp (*I*), the solution is forced from the bottle with low, even pressure. The use of the fruit jar furnishes a cheap and efficient container which is readily obtainable in large quantities. The lid clamp precludes any trouble with leakage about the stopper, regardless of the amount of negative or positive pressure exerted; and in case the blood is stored, the usual glass lid and rubber washer may be clamped on, sealing the jar quickly and securely.

2. COLLECTION OF HUMAN PLASMA FOR THERAPEUTIC USE

In the present influenza epidemic it occurred to us to try citrating the blood and sedimenting the cells in order to obtain plasma from convalescent pneumonia patients rather than obtain it by the usual clot and centrifuge method. The apparatus is especially adapted for the purpose, since jar after jar of blood may be obtained by merely shifting the stopper from one sterile jar to the next, drawing the blood and in turn sealing them with the glass top. It was soon found that dilution hastened by sedimentation, so that by using a 1 per cent. sodium citrate solution in physiologic sodium chlorid solution, 25 c.c. to 75 c.c. of blood, the cells settle to the lower half of the mixture in twelve hours' time when kept in the ice chest. For example, when 500 c.c. of blood are drawn, 125 c.c. of the citrate-sodium chlorid solution are used, and from the 625 c.c. mixture we obtain on an average 312.5 c.c. of serum and citrate-sodium chlorid solution mixture. This mixture is about one third citrate-salt mixture and two thirds plasma; hence from the 500 c.c. of blood drawn we obtain 200 c.c. of serum after twelve hours' sedimenting. The yield of serum obtained by the clot and centrifuge method as carried out in Boston recently has been about 300 c.c. per thousand c.c. of blood or 150 c.c. per 500 c.c. of blood. The supernatant fluid is decanted or drawn off with bulb pipets.

The advantages are the facility of obtaining the blood, the small amount of apparatus required (large centrifuges with suitable heads are only occasionally available), the small amount of handling necessary, and the large yield of plasma obtained.

Any number of jars are obtainable, and donors are bled in rapid succession with a single stopper by refilling the citrate bottle and occasional cleaning and boiling as a precaution against clotting and contamination. The plasma is used without regard to group or compatibility. Two cases, each complicated by empyema, among twenty-two treated with this plasma, were lost.

3. TEST PAPERS FOR THE RAPID SELECTION OF DONORS

It is always desirable to match blood directly if possible, and a modification of Lee's method is used, 2 drops of the patient's serum and 1 drop of the donor's red cell suspension (1 drop of blood to 1 c.c. of citrate-sodium chlorid solution) being placed at one end of a slide, and 2 drops of the donor's serum and 1 drop of the patient's red cell suspension at the other, and being incubated in a moist chamber at 37 C. for one hour.

For the grouping of donors and recipients a method has been devised which is workable and should prove practical, for men at the front particularly.

The blood is drawn and citrated as for transfusion, and then set in the ice chest for several days to allow as complete sedimentation as possible. The supernatant plasma and citrate are drawn off, placed in a large porcelain dish, and evaporated to dryness with the electric fan. To the residue is added the smallest amount of physiologic sodium chlorid solution that will dissolve the residue. Grinding in a mortar facilitates the solution. Squares of heavy filter paper are saturated from this after the method of preparing amboceptor paper for the Noguchi test. This is allowed to dry between layers of unbleached muslin. The dried paper may be kept sealed in oiled paper envelops or in any moisture-proof container.

For grouping, strong agglutinating papers of groups of two and three are needed. The test consists in cutting a strip of filter paper 2 mm. wide and 2 cm. long of two and three groups. These are folded into a V, placed on a polished background, preferably white enamel or porcelain, and a drop of water added to each. A drop of blood is drawn from the person to be grouped and a small portion of it put into each group. Sufficient salt and citrate will have gone into solution to prevent hemolysis and clotting. The concentration of the serum is such as to cause marked agglutination easily visible to the naked eye in from three to five minutes if it is to occur.

From experience with amboceptor paper and antibacterial serums thus preserved for use in the tropics, we may expect this serum to retain its agglutinins indefinitely. A small package would be enough for many tests and can readily be sent through the mails. No glassware or solutions are necessary for the test.

Rectal Injection of Arsphenamin.—A. Azemar publishes in the *Annales de dermatologie*, 1918, **7**, 14, a report on the rectal administration of the novarsenobenzol brand of neoarsphenamin in the treatment of syphilis. He reports the details of thirty-six cases and gives a summary of the literature on the subject. The drug was rapidly absorbed from the rectum, appearing in ponderable quantity in the urine in two hours, but there was none after the sixth day. The therapeutic effect is less rapid, less profound, less constant and less durable than when the drug is administered by the vein. The intrarectal technic might be utilized during periods of latency and as preventive treatment, but he does not advise it as a general method or with active manifestations. His dose was usually 0.9 gm. for otherwise healthy adults, repeated at six day intervals. In seven tenths of the cases, five injections completed the cure. With doses less than this the results were disappointing. For children and debilitated adults, the doses were 0.6 or 0.7 gm. He added ten or fifteen drops of tincture of opium to the fluid. There were never any indications of intolerance at the time or later. Mercurial treatment might be combined with this technic, but he did not attempt it.

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SATURDAY, NOVEMBER 16, 1918

ANOTHER WORD REGARDING CREATINURIA

In contrast with creatinin, creatin is not a normal constituent of the urine of healthy adult men, though it makes its appearance as the result of disturbance of metabolism. It may be found in the urine of women and is commonly excreted by children. These well substantiated facts offer a chemical and physiologic puzzle that has given rise to much speculation and considerable experimentation. The hypotheses advanced need not be detailed again here. They differ fundamentally in one respect, namely, as to whether the eliminated creatin is primarily of endogenous or exogenous origin. Rose has thus formulated the controversy: The acidosis theory of Underhill,[1] and the carbohydrate deficiency theory as developed by Mendel and Rose,[2] agree in attributing urinary creatin in individuals on a creatin-free diet to an entirely endogenous source, namely, the creatin of the tissues. The theory of McCollum and Steenbock[3] and of Denis[4] suggests an exogenous origin of urinary creatin in certain amino-acids of the diet. It is universally recognized that in ultimate analysis tissue creatin must be synthesized from amino-acid; but the question at issue is, Does creatin formation proceed only so far as this substance is needed by the cells, or may the reaction be induced indefinitely by the introduction of creatin precursors? In other words, Is creatin an anabolic product formed for a specific purpose or function, or is it a normal product of the catabolism of protein, whether this protein be of tissue origin (starvation) or of food origin (high protein diet)?

After Denis had reported that in adults with exophthalmic goiter and in normal children, the creatin output can be greatly augmented by increasing the protein of the diet, while it is promptly diminished in amount or made to disappear entirely by lowering the intake of protein, and that diets rich in protein lead to the excretion of creatin in normal women but not in normal men, contradictory evidence was soon produced. Rose, Dimmitt and Cheatham[5] showed that, contrary to the generally accepted idea, the feeding of much protein to fasting men can result in the entire disappearance of creatin from the urine. These investigations, undertaken at the University of Texas, have now extended[6] to demonstrate clearly that the ingestion of diets excessively high in protein fails to induce the excretion of creatin in normal women and men. Diets yielding from 3,400 to 3,900 calories a day, whether accompanied by a moderate (13 gm.) or a large (27 gm.) nitrogen intake, exerted no appreciable influence on creatin-creatinin metabolism.

The Texas biochemists adhere to the belief that no evidence has yet been adduced sufficient to justify the acceptance of a theory that postulates an exogenous origin of urinary creatin in the absence of creatin in the diet. This is quite different from the contrary hypothesis that "on the ingestion of protein some fraction of this is transformed into creatin, transported to the muscles, and there absorbed. If so much creatin is manufactured that the muscles become supersaturated, creatin is excreted by way of the kidney." The burden of proof for such a view still remains with its advocates. Meanwhile the secret of the genesis of creatinuria is still to be sought in the study of metabolism.

FOOD AND THE HUMAN MACHINE

"Food is the fuel of the human furnace, and must be furnished to that furnace in accordance with its needs." If this dictum of physiologic science is correct, we may properly inquire whether the needs of man are far smaller than students of nutrition have taught of late,[7] or whether the energy metabolism of the German subject has assumed a uniquely low level in consequence of the war. One hears of the pronounced reduction in food allowance among the civilian population of the late Central Powers, and the implication is that the rationing schemes are carried out without detriment to the inhabitants. We need to learn the lessons which their experience, whatever it may be, can teach; for America and her allies also have their food problems.

What are the accepted facts? The basal metabolism or heat production of an average man weighing 156 pounds (70 kg.) will be 70 calories an hour at rest and without food, or 1,680 calories in twenty-four hours. The maintenance requirement when food is ingested may be augmented by 10 per cent. The basal requirement of energy may be reduced by undernutrition, and this process may largely economize food. To accomplish a given amount of work, however, a fixed amount of food fuel is required, irrespective of the nutritive condition of the organism.

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[1] Underhill, F. P.: Jour. Biol. Chem., 1916, **27**, 127.

[2] Mendel, L. B., and Rose, W. C: Jour Biol. Chem, 1912, **10**, 213.

[3] McCollum, E. V., and Steenbock, H.: Jour. Biol. Chem., 1913, **13**, 209.

[4] Denis, W.: Jour. Biol. Chem., 1917, **30**, 47; Denis, W., and Kramer, J. G.: Ibid., p. 189. Denis, W., and Minot, A. S.: Ibid., 1917, **31**, 561.

[5] Rose, W. C.; Dimmitt, F. W., and Cheatham, P. N.: Experimental Studies on Creatine and Creatinine, VI, Protein Feeding and Creatine Elimination in Fasting Man, Jour. Biol. Chem., 1916, **26**, 339.

[6] Rose, W. C.; Dimmitt, J. S., and Bartlett, H. L.: Experimental Studies on Creatine and Creatinine, VIII, The Alleged Exogenous Origin of Urinary Creatine in the Protein of the Diet, Jour. Biol. Chem., 1918, **34**, 601.

[7] A valuable summary illustrated with charts, of what is known regarding the food requirement of boys from birth to 16 years of age, soldiers at hard work, and men and women in industrial pursuits is given by Lusk, Graham: The Fundamental Requirements of Energy for Proper Nutrition, The Journal A. M. A., March 23, 1918, p. 821.

It is reported that the German army received extra heavy rations prior to the commencement of the great offensive for Amiens on March 21 of this year, and the general advice is that that army has always been well provided with food. With the civilian population, however, the situation has been reported to be serious, and accounts agree that the worst shortage of food occurred in the spring of 1917. According to the published statement of a Munich clinician,[8] in October, 1917, the civilian ration at Munich contained protein, 56.7 gm., fat, 30.5 gm., and carbohydrate, 308 gm. It was made up of bread, meat, milk, potatoes, sugar, cheese, egg, butter and grits, and had a value of 1,760 calories. In January, 1918, it remained substantially unaltered. These astounding figures are corroborated by Jansen,[9] according to whom the official ration of Munich in the spring of 1917 contained 1,600 calories and 9.7 gm. of nitrogen, which is equivalent to 60 gm. of protein.

It is one thing to furnish a ration and another to nourish a population adequately with it. Jansen has thrown an illuminating light on the situation. The ration cited was given to several men who were occupied as interns in the medical clinic of Friedrich von Müller, and nitrogen balance experiments were carried out on them for from six to thirty-one days, as in the experiments of Chittenden. Prior to the observations the men had been for some time on short rations, especially as regards the protein components. It is stated, however, that the average loss in weight since the war began was about 5 kg., which certainly does not indicate excessive emaciation. The average weight of the subjects was 62 kg. While partaking of the foregoing diet each man lost weight daily and also very nearly 2 gm. of nitrogen. This loss was attributed to the deficiency of calories in the dietary, for the addition of 500 calories in the form of sugar resulted in maintenance of the body weight as well as in nitrogen equilibrium.

But the laws of the metabolism of energy are immutable. Two of the men, when partaking of the official Munich ration, undertook muscular exercise in the form of walking. Such exercise under ordinary circumstances would have been accomplished without effort. After walking three and five hours, however, the subjects felt obliged to return to Munich by train. Before the walk the basal metabolism had been determined as 1,400 calories a day. On the return to the laboratory the subjects were too excitable and irritable to lie quietly in the respiration chamber, but a determination of the basal metabolism of one of them was made twelve hours after the completion of the walk and showed an increase of 50 per cent. above the normal level.

It appears from these experiments that what is publicly proclaimed as the official ration of a German city must be supplemented to a very considerable extent by the purchase of unrationed foodstuffs if the day's work is to be accomplished. It is furthermore interesting to note the statement that two women interns had both gained in weight during the war. Since a woman needs less food than a man, any attempted equality in the distribution of foods would ensue to her benefit.

THE PARATHYROIDS AND IDIOPATHIC TETANY

However expressive the word "idiopathic" may be as an indication of definite symptoms or as the designation of a recognized clinical entity, it almost invariably leaves a query in the mind of the critical student as to the underlying cause or significance of what is described thereby. This has long been true of idiopathic tetany or spasmophilia. This hyperexcitable state of the nervous system is manifested by a spastic condition of the muscles of the extremities, by laryngeal spasm, and by epileptiform convulsions in its active state. In the more recently described latent forms there is merely an increased response to mechanical or electrical stimulation of the peripheral nerves. In childhood, idiopathic tetany is usually associated with rickets; in adult life, its incidence goes with dilatation of the stomach, pregnancy, certain infections, and a few occupations. These facts have long been known.

Of the many causes that have been assigned to this spasmophilia—disease of the brain, "rheumatism," metabolic derangements, specific infection, and endocrine abnormalities, the last has offered the greatest possibility of opening the way to a better understanding of the etiology. Although the possible association of the parathyroids with tetany was suggested by clinical workers as early as 1902, it has been the experimental physiologists who have made the more convincing contributions to the subject. So long as the independence of the thyroids and parathyroids was not clearly recognized and demonstrated, there was bound to be confusion in the investigation of the physiology and pathology of these organs. Now that the demonstration of their individuality and embryologically separate origin is accepted, it is worth while to consider more seriously the claims as to the relation of the parathyroids to the clinically recognized forms of idiopathic tetany.

There is agreement today among experimentalists that the nervous symptoms described often in the past as occurring after thyroidectomy are due to removal of the parathyroids. Too little attention has been paid to the noteworthy series of contributions from the Department of Physiology at the University of Glasgow which won the 1916 Warren Triennial Prize of the Massachusetts General Hospital for D. Noël Paton and his co-workers. They agree that all the nervous symptoms are undoubtedly due to the condition of the central nervous system. Section of the nerves to any part of the body entirely and immediately abolishes all spasms, tremors and jerkings of the muscles supplied. Consequently the condition of the peripheral neuromuscular mechanism is not likely to be the occasion for the primary action in the production of the symptoms. The parts played by the spinal, cerebellar and cerebral arcs are by no means yet clear.

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[8] Pfaundler, M.: Ration und Bedarf an Nährstoffen für Kinder, München. med. Wchnschr., 1918, **65**, 173; abstr., Physiol. Abstr., 1918, **3**, 255.

[9] Jansen: Untersuchungen über Stickstoffbilanz bei kalorienarmer Ernährung, Deutsch. Arch. f. klin. Med., 1917, **124**, 1.

Paton, Findlay and Watson[1] agree that undoubtedly the most constant change after parathyroidectomy is the increase in the response to galvanic stimulation. This hyperexcitability has long been referred to as a valuable sign of the condition of tetania thyreopriva, especially when other symptoms are not conspicuous. The Glasgow investigators, in their extensive researches on this subject,[2] have established that the absence of a direct relationship between the severity of the nervous symptoms and the electrical excitability of the peripheral neuromuscular mechanism is a clear proof that this altered excitability is a phenomenon of secondary importance to the changes in the central nervous system, and that it cannot be taken as a measure of the severity of these disturbances.

In searching for a further index to the causes of the symptoms recorded, attention has been centered on metabolic phenomena. According to the observations of Paton and his collaborators, we are encouraged to believe that there is no evidence of a direct controlling influence of the parathyroids over the central nervous system. The symptoms of the tetany following parathyroidectomy are also not primarily due to the loss of calcium from the body, as was postulated at one time. Paton and Findlay have observed, however, that the phenomena of guanidin poisoning correspond very closely with those of tetania thyreopriva. Furthermore, they found a marked increase in guanidin and methyl guanidin in the blood and urine of animals after removal of the parathyroids and also in the urine of children suffering from idiopathic tetany. Hence the conclusion that the parathyroids control the metabolism of guanidin in the body by preventing its development in undue amounts. In this way, they probably exercise some regulative action on the tone of the skeletal muscles. Finally, the same investigators suggest that tetania thyreopriva and idiopathic tetany are identical as regards their characters and metabolism, and although the histologic evidence is not conclusive, in all probability the parathyroids are implicated in both conditions. The metabolic history of the guanidin manifestations remains undetermined. A relationship between it and creatin has often been postulated. Perhaps this will be a profitable direction for the prosecution of future studies in this field, particularly since the striking similarity between an experimentally obtainable condition and a recognized clinical entity has been pointed out.

VITAMINS AND METABOLISM

The enthusiasm and concern that are awakened just now by the subject of vitamins in the discussion of nutrition are perhaps unequaled by any similar interest with the possible exception of that commanded by the idea of the calory. In reviewing the momentary status of our knowledge, Professor Steenbock[1] of the University of Wisconsin has remarked, with intelligent appreciation of the situation, that "as experimentation revealed symptoms attributable to vitamin deficiency, the general public, ever easily impressed by matters unexpected, and matters so vital as to revolutionize the conception as to what constitutes an adequate diet, soon became alarmed. At present it is probably not overstating the situation when it is said that the previously considered all-important attributes of an adequate ration, such as sufficient protein, calories and salts, have probably been slighted by the sudden interest taken in vitamins."

In the immediate past the attention of scientific investigators has been directed in greatest measure to the discovery of the occurrence and distribution of those properties of foods to which the name vitamin has been applied. Studies have been made of the consequences which attend a lack of vitamins in the diet; and much effort is now being expended in ascertaining to what extent, if at all, certain disorders of nutrition are attributable to a deficiency in vitamins.[2] Although many important properties of these essential food factors have been described, the attempts to ascertain their chemical identity have thus far failed. The fact that an antineuritic substance contained in yeast extracts can be absorbed by preparations of fullers' earth and thus in a sense be isolated from the medium containing it gave hope that the "active principle" might readily be isolated. In this way a purin compound, adenin, was identified, but it has proved to be inactive. Presumably the adenin is associated with the antineuritic factor only in yeast, just as nicotinic acid has been shown to be associated with it in the antineuritic extract of rice polishings.[3] Both com-

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[1] Paton, D. N.; Findlay, L., and Watson, A.: The Parathyroids—Tetania Parathyreopriva: Its Nature, Cause and Relation to Idiopathic Tetany, Part III, The Changes in the Peripheral Nerves and the Muscles, Quart. Jour. Exper. Physiol., 1916, **10**, 243.

[2] Paton, D. N., and others: The Parathyroids: Tetania Parathyreopriva, Its Nature, Cause and Relation to Idiopathic Tetany, eight papers, Quart. Jour. Exper. Physiol., 1916, **10**, Nos. 3 and 4; abstr., Brit. Med. Jour., 1917, **1**, 575; abstr., The Journal A. M. A., June 9, 1917, p. 1784.

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[1] Steenbock, H.: Vitamins and Nutrition, Scient. Month., 1918, **7**, 179.

[2] Compare Mendel, L. B.: Some Relations of Diet to Disease, New York Med. Jour., 1918, **108**, 49.

[3] Barger, G. C.: The Simpler Natural Bases, London, 1914. Drummond, J. C., and Funk, Casimir: Biochem. Jour., 1914, **8**, 598.

pounds, when thoroughly purified, become inactive. How, then, do the vitamins exert their functions? Conjectures have not been wanting. Very early in their history the vitamins were assumed to behave like enzymes—an analogy which lacks anything more than fanciful guesswork. In a recent elaborate treatise on dietotherapy,[4] the writer of the chapter on vitamins, reflecting the current uncertainty on the subject, has omitted conjecture as to their mode of action; but the editor has ventured the statement that in nutrition "they play a rôle which might be likened to that of the hormones in cellular activity or the opsonins and other antibodies in the infections." Attention has been directed in THE JOURNAL[5] to the lack of foundation for the once-asserted belief[6] that vitamins (or at any rate the antineuritic substances) play some part in carbohydrate metabolism. In an experimental study on rats—the classic animals in research of this type—Drummond[7] of the Cancer Hospital Research Institute, London, has found that the nitrogenous metabolism during diets deficient in the water-soluble dietary accessory substance shows no apparent deviation from the normal with the exception of an occasional creatinuria. This abnormality, however, is observed whenever there is a wasting of musculature, such as occurs as the result of the low intake of food in animals on a deficient diet.

It has been suggested, in view of the lowered food consumption observed when the water-soluble vitamin is lacking,[8] that the latter influences the appetite in some way. Drummond noted that an increased food consumption may be brought about by the addition of flavoring agents, such as meat extract, to the synthetic diets; but unless the additions contain vitamin, no growth results. The amount of growth is, within certain limits, proportional to the amount of accessory substance added, provided the diet is adequate in other respects. Such facts make it clear that vitamins are something more than mere carminatives that stimulate the appetite. Any promotion of the latter is more likely the outcome, as Osborne and Mendel have suggested, of the improved condition of the individual when vitamins are available in the diet. The cause of the fatal decline that inevitably follows a deficiency of vitamin has not yet been ascertained. It appears, however, that age plays a part in the rapidity with which symptoms of decline intervene. In older subjects, in whom maintenance rather than growth is concerned, a restriction can be borne far better than in the young.

Current Comment

THE MEDICAL PROFESSION AFTER THE WAR

In April, 1917, our country called on the medical profession for volunteers for medical service. The response was both prompt and generous. Again and again the call came, and each time met similar prompt and generous response. Some 35,000 physicians have responded to these calls and are serving in the Army or in the Navy. In addition, about 25,000 physicians have given freely of their time and labor to work on Selective Service Boards, thus making possible that efficient, physically fit machine—the National Army.

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It is too soon—the world, victorious and vanquished, too unsettled—to say what is coming and what is to be done. It is an hour in which nations are being made, unmade and remade. We hear, we talk, we read of reconstruction. The reconstruction problems are, in the main, twofold: one, the salvaging of mutilated humanity; the other, the reconstruction of devastated cities, towns and villages. The former, the salvaging of the heroic remnants of war-worn men, is the more important. Our reconstruction problem as applied to the physical reconstruction of the disabled soldiers is certain not to be the gigantic task that it would have been had the war continued for a long period of time. There will, of course, be much to do in this regard; but this work is in competent hands and well provided for. Our reconstruction problem as it applies to the returning of more than 30,000 military physicians to civilian life is again not a problem of magnitude. The physician before he went to war was, in most instances, a man of home and family, and in most instances home, family, his professional confrères and the community wait to welcome him with honors.

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However, our reconstruction problem as it concerns the relation of the physician to the great social problems that are to arise "after the war," is a problem of magnitude. One's senses are startled by phrases in the modern writings on social and economic subjects. One hears of "equalization of risk and return," of "conscription of wealth," of "health insurance," of "national ownership," of "state medicine," of a "league of nations," "international medical alliances," and similar conceptions. With these, and as a part of these, will be new problems of the relation of physicians to each other and to the public. Physicians will have as much influence as any other class in the weaving of the new social fabric. It is well to realize this and to appreciate the need of closer knitting together of the profession itself—of stronger organization—so that we may face these problems with the strength of many minds united. Thus the medical profession may be able, not only to secure the rights and recognition it merits, but also to have that real influence necessary for the best interests of the public health in the new order of things. The medical profession has served, it serves and it will continue to serve when called on, but in its altruism must not forget that the profession will have to guard its own rights and prerogatives if they are to be guarded at all.

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[4] Dietotherapy, by W. E. Fitch and Forty Contributors, New York, 1918, **1**, 234; **2**, 221 (by A. B. Macallum).

[5] Beriberi and Carbohydrates, Current Comment, THE JOURNAL A. M. A., July 20, 1918, p. 198.

[6] Funk, Casimir: Ztschr. f. physiol. Chem., 1914, **89**, 378. Braddon and Cooper: Jour. Hyg., 1914, **14**, 351.

[7] Drummond, J. C.: A Study of the Water-Soluble Accessory Growth-Promoting Substance, II, Its Influence upon the Nutrition and Nitrogen Metabolism of the Rat, Biochem. Jour., 1918, **12**, 25.

[8] Osborne, T. B., and Mendel, L. B.: Jour. Biol. Chem., 1917, **31**, 149.

CORN OIL AS FOOD

Elsewhere in this issue of The Journal[1] are recorded the results of an investigation, conducted in the Laboratory of Physiological Chemistry at the University of Iowa, on the digestibility by dogs of corn oil, prepared from the germ of maize, in comparison with the utilization of lard and the now widely used cottonseed for which it is chiefly substituted. The results clearly indicate that all of these fats, used in similar amounts, are essentially comparable as regards their digestibility. There is no reason to assume that the findings are not equally applicable to man. The average figures for the fat absorbed—corn oil, 98.9 per cent., cottonseed oil, 98.8 per cent., and lard, 97.8 per cent.—leave little to be desired from the alimentary standpoint. These data are in accord with the recent experiments of Holmes[2] of the United States Department of Agriculture indicating the excellent utilization, by man, of a not inconsiderable number of fats and oils of vegetable origin, some of which are as yet little known as dietary possibilities. In commenting on them, The Journal pointed out an important fact which must at present be kept clearly and prominently in mind whenever the modern "substitutive fats" are under consideration. Some animal fats, notably milk fats, contain those little understood but very important properties designated as vitamins, without which the organism ordinarily fails to grow or recover from nutritive injury as it should. Since these are not found in most vegetable oils, we must not fail, in the present stage of knowledge, to provide children and invalids with some suitable vitamin-containing animal fats, preferably perhaps from milk. Digestibility is only one factor, though a highly important one, in the nutrient possibilities of foods.

THE MATERIAL LOST IN MENSTRUATION

Although it is usually stated that the amount of blood lost at each menstrual period varies between 100 and 300 gm., there have been few accurate data available regarding the actual losses of body components incident to this physiologic change. Definite information is afforded by recent observations at the Nutrition Laboratory of Teachers College, Columbia University.[3] In periods lasting from four to five days the highest observed losses through the menstrual flow were: of nitrogen, 3.4 gm.; phosphorus, 0.06 gm.; calcium, 0.02 gm.; iron, 0.04 gm. In comparison with the normal daily metabolism, losses of this degree are comparatively insignificant except in the case of iron. The output of nitrogen in the flow represents not more than 0.1 gm., equivalent to about 6 gm. of protein per day for the month. The losses of calcium and phosphorus are smaller than the chance variations in the usual output from day to day. If the daily requirement of iron by the adult is placed at from 0.010 to 0.015 gm., it is possible that the loss of iron through the menstrual flow is sufficient to suggest consideration of it in connection with the selection of the daily diet. At any rate, the iron output offers the only obvious indication of significant loss. The outcome of the analyses is, as the investigators themselves recognize, that there is no pronounced periodicity in the output of phosphorus and calcium, and that the amounts of these elements lost in menstruation are not sufficient to make the nutritive requirements of women for these elements materially different from those of men of the same weight.

ARCHIVES OF NEUROLOGY AND PSYCHIATRY

At the session of the American Medical Association last June, a petition signed by a large number of the leading neurologists and psychiatrists of the United States and Canada was presented to the Board of Trustees, asking that the Association publish a journal to be devoted to nervous and mental diseases, on a plan similar to that on which the *Archives of Internal Medicine* and the *American Journal of Diseases of Children* are published. The board took the matter under advisement until its October meeting, at which time it acted favorably on the petition, and authorized the publication of such a journal. The journal will be known as the *Archives of Neurology and Psychiatry*. The following were appointed as the editorial board:

Dr. Pearce Bailey, New York, adjunct professor and assistant professor of neurology at Columbia University College of Physicians and Surgeons, New York.

Dr. Augustus Hoch, now of Montecito, Calif., formerly professor of clinical medicine, department of psychopathology at Cornell University Medical College.

Dr. Hugh T. Patrick, Chicago, clinical professor of nervous and mental diseases, Northwestern University Medical School.

Dr. E. E. Southard, Boston, professor of neurology, Medical School of Harvard University.

Dr. Frederick Tilney, New York, professor of neurology, Columbia University College of Physicians and Surgeons, New York.

Dr. T. H. Weisenburg, Philadelphia, professor of neuropathology and clinical neurology, University of Pennsylvania School of Medicine.

The aim of all connected with the new journal is to make it representative of the best American product in the realm of nervous and mental diseases—the best in things immediately practical as well as scientific. The press of the American Medical Association is today thoroughly equipped, and thus is prepared to produce journals such as the one under discussion in a manner satisfactory to the most critical, and at the same time economically. It is unnecessary to say that the publication of these special journals is undertaken, not with the idea of financial profit, but solely for the purpose of advancing scientific medicine in the United States.

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[1] Page 1649.

[2] Holmes, A. D.: Digestibility of Some Seed Oils, Bull. U. S. Dept. Agric., No. 687, 1918.

[3] Gillett, L. H.; Wheeler, L., and Yates, A. B.: Material Lost in Menstruation of Healthy Women, Am. Jour. Physiol., 1918, **47**, 25.

PICRIC ACID INTOXICATION AND JAUNDICE

Picric acid (trinitrophenol), which has long been used in the manufacture of certain explosives, is recognized as the cause of occasional cases of industrial poisoning. It enters the body in the form of dust, by inhalation. Skin affections, yellow pigmentation of the epidermis and conjunctiva, and digestive disturbances have been attributed to the poison. Although picric acid has been replaced in the munitions industry to a considerable extent by the now familiar T. N. T., trinitrotoluene, the foreign war time medical literature shows that intoxication with the former has gained an unexpected prominence. This is partly due to the fact that picric acid has been used by malingerers in the attempt to avoid military service. When from 30 to 90 centigrams, that is, up to about 15 grains, of this yellow compound are taken, vomiting and diarrhea may ensue and thus remove a considerable part of the poison from the alimentary tract. If sufficient is absorbed, a coloration of the skin and sclera will ensue. This may be due to picric acid itself or to its reduction product, picramic acid, according to Malmejac and Lioust,[1] who have observed many cases. The coloration is frequently accompanied further by symptoms of true jaundice of hepatic origin as a complication of the poisoning. In that event, bile pigments and biliary acids may appear in the urine along with excreted picric acid and its derivatives. It therefore becomes imperative to examine the urine for the latter in order to permit a correct diagnosis.

Medical Mobilization and the War

Honors to Major-Gen. William C. Gorgas

Major-Gen. William C. Gorgas has been notified that the decoration of "the Grand Officer of the Order of the Crown of Italy" has recently been conferred on him.

On October 26, Secretary of War Baker, wrote the following letter to General Gorgas:

October 28, 1918.

My Dear General Gorgas:

Your official term as Surgeon-General of the Army having expired, I beg leave to express to you the appreciation of the Army and the country of the distinguished services which you have rendered during your long and brilliant career as a medical officer. Even the gracious modesty which is a part of your habit of thought cannot keep you from realizing that your career has been one of brilliant distinction, and that the Medical Department of the Army has profited from your services, as it has been honored by your deservedly high reputation. The operation of law has terminated your period of active service, except for the emergency work which you are now doing under my direction, but it will be a source of satisfaction to me and a comfort to the people of the country to realize that your interest will continue in the Army and in the great scientific researches in which your life has been engaged.

If I may add a personal word to this note, I beg you to accept my grateful acknowledgement of the cordial and helpful relations which have existed between us officially, and to thank you for the many personal courtesies and kindnesses which I have received from you during our most happy association.

I am placing a copy of this letter in the hands of the Adjutant General in order that it may become a part of your record in the department, and may there remain as an evidence of the complete success with which you as a soldier and a doctor have through long years and under varying and difficult conditions served your country.

Cordially yours,
Newton D. Baker,
Secretary of War.

Bureau of Medical Research and Intelligence for Red Cross in Paris

Among its other activities the American Red Cross in France has established a Bureau of Medical Research and Intelligence Department, of which Lieut.-Col. Alexander S. Lambert is the chief. The individual divisions are: Medical Library, Medical Publications, Medical Research and Medical Intelligence bureaus. The department undertakes to supply the field, camp and evacuation hospitals with medical books and journals as also to reply to individual requests as to most recent developments in war medicine and surgery. For the latter, the Medical Intelligence Bureau, of which Major Thomas H. Halsted is chief, is occupied specially with looking up literature, reports of commissions, etc. It responds at once to all requests for information on medical and allied subjects asked for by any medical member of the American Expeditionary Forces or of the Red Cross. An index is kept of all articles relating to war medicine and surgery, and also abstracts of the more important ones. Dr. Emil Mayer of New York City has been appointed representative of the United States for this bureau. Writers of original articles on war subjects are requested to send two reprints thereof as soon as possible to the Medical Intelligence Bureau, American Red Cross, 9 rue du Mont Thabour, Paris, France.

The Inter-Allies Institute for Rehabilitation of the War Disabled

The *Presse médicale* states that the permanent committee which has been appointed to centralize matters connected with the rehabilitation of disabled soldiers, comprises representatives of all the allied governments. They include Dr. Bourrillon (France), who serves as president of the committee; Dr. Mélis (Belgium), Sir Charles Nicholson (Great Britain), General Bradley (United States), L. March (France), Dr. Da Costa Ferreira (Portugal), and Agathonovitch (Serbia) as vice presidents. All these hold high military rank. An institute for research has been founded at the headquarters of the committee which is already installed at 102 rue de Bac, Paris. A review is to be issued by the committee. The editor in chief is Dr. Jean Camus, *professeur agrégé* at the Paris Faculté de médecine, with Dr. Bourrillon, the president of the committee, and Mr. C. Krug, the secretary general, as the board of directors for the publication. The work of the committee is to include the promulgation of the general principles for rehabilitation of the disabled, which each country can adapt to its own laws and customs; to group and centralize the data and the lessons learned from experience, and to apply them and aid in every way the mutilated and to extend this aid into the future after the war. By this coordination of efforts each one of the allied peoples will be able to profit by the improvements and achievements realized in any one of them.

Posthumous War Honors

The Distinguished Service Cross for extraordinary heroism in France has been posthumously awarded to Lieut. George P. Howe, M. C., U. S. Army, Boston, who was killed in action, Sept. 28, 1917, and to Lieut. John P. Rosenwald, M. C., U. S. Army, Minneapolis, on duty with the One Hundred and Fifty-First Artillery, who died, May 6, 1918.

Distinguished Service Cross Awards

The commander in general has awarded the Distinguished Service Cross to the following named officers of the Medical Department, American E. F.:

First Lieut. Frank L. Williams, Medical Corps. "For extraordinary heroism in action in Champagne, east of Rheims, July 15, 1918, and near the River Ourcq, northeast of Chateau Thierry, France, July 30, 1918. Lieut. Williams voluntarily left a dugout on the Champagne front and for more than two hours, all the time under shell fire, administered to the needs of wounded men who were lying in the open. During the advance across the River Ourcq he voluntarily remained in exposed positions under heavy shell fire, caring for and dressing the wounded until he was severely injured."

Capt. George H. Gage, Medical Corps, Infantry. "Conspicuous for his courage in the actions at Rambucourt, on March 17, 1918, and at Catigney, May 28, 1918. He gave inspiration to the officers and men of the command by his extraordinary heroism throughout the operations south of Soissons, July 18 to 22, 1918, and especially at Berzy-le G., July 21, 1918, when he accompanied the first line and attended the wounded in the open under incessant machine-gun and artillery fire."

First Lieut. Frederick W. Black, Field Hospital, Medical Department: "For extraordinary heroism in action near Soissons, France, July 18-22, 1918. He went over the top to the attack in the first wave and was wounded on the morning of the first day. Disregarding his wound, he pressed on with the attacking troops and crossed and recrossed the sector immediately behind the most advanced wave, rendering first aid to wounded and placing them in shell holes. He worked unceasingly without sleep or rest, and was again wounded on the fourth day by shell fire. Though twice wounded he steadily refused to be evacuated until the evening of the fourth day, when he was exhausted and suffering from his wounds."

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[1] Malmejac, F., and Lioust, C.: Jaunisse picrique et ictère, Jour. de physiol., 1918, **17**, 685.

Capt. George E. McGinnis, Ambulance Company, One Hundred and Ten, and One Hundred and Third Sanitary Train. For extraordinary heroism in action at Fismette, France, August 9 to 10, 1918: "During the night of August 9, Captain McGinnis, with complete disregard of his personal safety, made a reconnaissance under fire and located a line of evacuation for ambulances from Fismette and on the morning of August 10, under shell fire, he personally repaired the bridge between Fismes and Fismette, thereby making possible the evacuation of twenty-eight wounded men."

Weekly Bulletin, American Expeditionary Forces

The following paragraphs are taken from Weekly Bulletin No. 27, Oct. 14, 1918, issued for circulation among American medical officers in France:

PNEUMONIA'S DEMAND IS COMPLETE ISOLATION

The demand in pneumonia is the complete isolation of patients from each other when of different bacterial etiology as if they were cases of measles, meningitis or diphtheria, all with similar symptoms. Pneumonia, it has been well said, is a group of diseases with certain common signs and symptoms, and never was this more obvious than under present conditions in France, where typical physical findings and symptoms before death have been found alike in individual patients and in groups of patients in whom examination of sputum and blood has shown almost pure cultures of pneumococcus of the various strains—streptococcus, influenza bacillus and meningococcus types B and C—confirmed as well by smears from lungs and blood after death in many instances. It behooves all medical officers to be on their guard against the dangers of mixing or crossing infections among patients by the least neglect of precautions such as cubicle isolation and masking of patients and attendants. In one case recently reported, Type IV pneumococcus and Type B meningococcus were found in abundance in the secretions of different parts of the respiratory tract. The comments of the commanding officer of the Army Laboratory are very much to the point and should stimulate more intensive study of cases and their respective etiology:

"On looking back over the case, there is considerable regret that (*a*) specimens of sputum were not examined at more frequent intervals during the course of the disease; and (*b*) that at the autopsy, smears and cultures were not obtained at varying levels down the entire respiratory tract."

This case is of chief interest from an epidemiologic standpoint: Because, if the meningococcus is frequently associated with the pneumococcus (or other organisms), in cases of pneumonia and bronchopneumonia, aside from its possibilities of being the causative agent of the condition, there arises the important possibility of the wide dissemination of the meningococcus, at the onset of the disease, by coughing and expectoration; this would be especially true in cases of bronchopneumonia, due to the more gradual onset.

Associated with this case may be mentioned a sharp outbreak of influenza-bronchopneumonia, occurring in an organization of 329 men. There were sixty-eight cases of this condition with five deaths within ten days. At the termination of this epidemic of influenza-bronchopneumonia, a case of epidemic cerebrospinal meningitis (Type B, Pasteur) developed in this organization; twenty-nine close contacts with this case of meningitis were cultured (nasopharynx), with 50 per cent. positive carriers, of whom 80 per cent. were subsequently shown to be carriers of the meningococcus (Type B, Pasteur). This percentage of positive carriers is considerable in excess of the percentage of positive carriers among contacts with cases of meningitis, not associated with coincident respiratory disease, as determined at this laboratory."

FURTHER EVIDENCE OF DISTRIBUTION OF PATHOGENIC BACTERIA

Further evidence of the distribution of the various pathogenic bacteria in pneumonia cases coming to necropsy is found in the following summary of a report from the central laboratory:

"The bacteriologic examinations of lungs at necropsies in thirty cases of pneumonia at Base Hospital No. 17 during September, 1918, showed Pfeiffer bacillus in twelve (or 40 per cent.), pneumococcus in thirteen (or 43 per cent.), streptococcus in ten (or 33 per cent.). Considering the difficulties attending the isolation of the influenza bacillus and the possibility of its being absent from the lung at necropsy, although actually an important agent in the disease, the results indicate that this organism has been of primary importance in this group of cases. From other reports of epidemics in various parts of the advance section it is considered that the above findings are characteristic of the present epidemic."

CHANGE IN MEDICAL LEADERSHIP IN A. E. F.

On October 12 Major-Gen. Merritte W. Ireland left the A. E. F. for his new responsibilities as Surgeon-General, U. S. Army.

Col. Walter D. McCaw, appointed chief surgeon of the A. E. F., assumed the duties of the position vacated by General Ireland's departure.

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The following paragraphs are taken from Weekly Bulletin No. 28, Oct. 21, 1918, issued for circulation among American medical officers in France:

INFLUENZA, PNEUMONIA, MENINGITIS

During the past two months a second wave of severe influenza infection has swept over France and has spread to all the countries of Europe in about equal force. In the United States the onset of the epidemic was, as is usually the case with pandemics of influenza, about three weeks later than in London and Paris. The first and rather benign phase of the infection, it will be remembered began in the middle of April and had largely disappeared in the American Expeditionary Forces by the end of July. The second phase which has not yet reached its maximum incidence has been characterized by a much higher percentage of initially severe cases and particularly of pulmonary complications. Coming at the time of rainy and changeable weather this new invasion of infectious colds and coughs has been accompanied by a constantly increasing number of pneumonias. New replacement draft detachments arriving with each convoy have added the heaviest percentage of infected men per strength and have shown the highest percentage of complicating pneumonias. It has been a usual observation that when infections of the upper respiratory tract prevail, the incidence of meningitis in the community increases soon after and this rule prevails at present. An increasing severity of the pneumonia is commonly found when the disease is permitted to pass rapidly through successive hosts.

Week Ending	Cases Influenza	Cases Acute Bronch.	Cases Bronch. Pneu.	Cases Lobar Pneu.	Cases Meningitis	Deaths among Pneumonias
Sept. 13	3,066	495	78	401	21	14.5%
Sept. 20	4,279	476	101	376	18	29.3%
Sept. 27	3,921	524	154	427	47	31.9%
Oct. 4	9,285	988	364	671	88	34.9%
Oct. 11	5,794	890	194	401	134	45.3%

It is known that not less than 200,000 cases of influenza were reported during the past week among the troops in the camps in the United States. It has been officially reported that 80 to 90 per cent. of the mobilized army of Switzerland was affected soon after the introduction of the infection by prisoners exchanged through Switzerland from Germany. From official information from Portugal it appears that the influenza infection is no less severe there than in the American Expeditionary Forces, and the pneumonia is of as fatal a type.

The influenza and pneumonia now prevalent among French civil and military population is at least as severe as in the troops of the American Expeditionary Forces. The areas of heaviest infection of influenza, pneumonia and meningitis in the American Expeditionary Forces are the base ports, the depot divisions and such training areas in both service of supplies and advance zones as have received replacements or new organizations still including men exposed to the massive infection which has prevailed on the transports and on troop trains.

Substantial relief is to be expected soon from the frequently recurring infections introduced through base ports by incoming troops by the following improvements:

(*a*) Careful exclusion of men with colds, coughs and fever from transports at ports of embarkation.

(*b*) Equipment of all troops prior to embarking with three blankets, an overcoat, and winter weight woolen underclothing.

(*c*) Reduction of troops carried on transports to 80 per cent. of berth capacity.

(*d*) Increase of hospitalization capacity on transports to 4 per cent. of troops.

(*e*) Shelter ready and standing for troops on arrival at base ports, with provision for permanent kitchen and mess service for arriving troops.

(*f*) Period of not less than four days with no heavy duty on debarking.

(*g*) Medical supervision of troops on troop trains.

(*h*) Gradual hardening and acclimatization process at depot divisions, with isolation so far as practicable of new arrivals from earlier arrivals or permanent troops until infection has been eliminated.

(i) Increase in the floor space per capita to be provided wherever practicable up to 40 square feet per man.

(j) Separation of adjacent bunks by permanent board or shelter half partitions.

It will take continued concerted effort by all medical officers in the application of all measures of local sanitation and supervision of the personal hygiene of the men to avoid further extension of influenza with its complicating pneumonias and often coincident meningitis. Men's bodies must be kept warm. Their clothing must be dried at least once a day.

Sufficient blankets and drying rooms accessible to every one, especially in the regions immediately back of the fighting front are indispensable for prevention of pneumonia. In the service of supplies and in areas occupied by troops in training or reserve the problem is largely one of personal contact and crowding; among the troops at the front it is a question of fatigue and exposure; determination to remedy both will go far to save lives.

A report from the First Army Corps indicates that pneumonia is not epidemic, though prevalent there; that influenza bacillus and pneumococcus are the usual infecting bacteria; that incomplete clothing equipment and sleeping in cold and wet are the chief contributing causes.

EPIDEMIC DISEASE REVIEW FOR THE WEEK

Reports from the American Expeditionary Forces for both influenza and pneumonia show a reduction in the number of new cases of these diseases. A similar reduction in new cases has been reported by the French authorities from certain areas, notably the District of Paris and the Arrondisoment of Tours, these reports including the conditions in the civil as well as in the French military population. The convoys which have arrived in the past week have shown a decidedly lower death rate and incidence of influenza and pneumonia en route than has been the case for the previous three weeks. The death rate from pneumonia has risen in the past five weeks from 14.5 to 45.4 per cent. of cases.

Meningitis has fallen from 167 cases reported last week to 147 this week. Of these sixty-five were reported from base ports among the sick hospitalized on arrival of transports and thirty-six more occurred in the depot divisions, training areas, and even in troops in the advance section among contingents which had been in France less than two weeks and had been exposed to heavy infecting during ship and rail transportation. The forty-eight cases of meningitis not thus accounted for as new importations in the American Expeditionary Forces were from widely scattered points and were not grouped in epidemic foci.

Of the 163 cases of measles 139 were among recently arriving troops and were detected at base ports and at depot divisions. Of the thirty-nine reported cases of dysentery nineteen were from one hospital in the advance section and the origin is thought to have been exposure and unsuitable food rather than an infection with specific dysentery organisms.

The diphtheria is chiefly chargeable to combat troops in the advance section (forty-one of seventy-eight cases). The cases reported from the intermediate section are chiefly among the recently evacuated men in base hospitals and among hospital personnel in the base hospitals.

The eight cases of typhoid fever, all from Novors, are part of a local outbreak in which thirty other cases have occurred in the French population. Contaminated food served by unrecognized carriers or cases in the public eating places is supposed to be responsible for this outbreak.

COMMISSIONS OFFERED AND ORDERS TO DUTY ON ACCEPTANCE

Alabama

To Camp Jackson, S. C., base hospital, for instruction, Capt. E. M. PRINCE, Birmingham.

To Fort Oglethorpe for instruction, Lieuts. C. C. BOX, Ashford; E. O'CONNELL, Birmingham; B. T. BRIDGES, Black; J. T. PATTILO, Shawmut; I. C. BATES, Taylor; N. S. GAY, Whistler.

Arizona

To Camp Cody, N. M., base hospital, Capt. R. R. BROWNFIELD, Phoenix.

To Camp Kearney, Calif., Lieut. C. I. HUGHES, Phoenix. Base hospital, for instruction, Lieut. A. B. CARMICHAEL, Prescott.

Arkansas

To Camp Pike, Ark., Lieut. W. H. OWENS, Turrell.

To Fort Riley for instruction, Lieuts. R. C. KENNERLY, Artisian; W. M. CARNER, Bodcaw; G. F. McLEOD, Magnolia; N. HORTON, Plumerville; W. S. EMBREY, Texarkana.

California

To Camp Cody, N. M., base hospital, for instruction, Capt. I. W. JONES, Lieut. W. H. BROWNFIELD, Los Angeles.

To Camp Fremont, Calif., Lieut. E. H. NEWBOLD, Oroville. Base hospital, for instruction, Capt. C. O. FALK, Eureka.

To Camp Kearney, Calif., Capts. G. H. HASTINGS, Los Angeles; E. S. BLAIR, San Bernardino; Lieuts. R. M. O'NEAL, Bishop; F. A. EDWARDS, Los Angeles; J. F. KERGAN, Oakland. Base hospital, Capt. H. BARKAN, San Francisco. Base hospital, for instruction, Capts. C. A. DOZIER, C. J. TEASS, San Francisco; Lieut. R. S. LEACHMAN, Vallejo.

To Camp Lewis, Wash., Capt. D. R. SMITH, Mendocino; Lieut. H. D. BRUSCO, San Francisco.

To Fort Oglethorpe for instruction, Capts. W. S. JOHNSON, Los Angeles; J. R. FEARN, Oakland; V. E. PUTNAM, San Francisco; F. W. REYNOLDS, San Padro; Lieut. G. R. LUTON, Santa Barbara.

To Fort Riley for instruction, Capt. R. J. NICHOLLS, San Francisco; Lieut. W. E. BIXBY, Sebastopol.

To Mineola, N. Y., Hazelhurst Field, for instruction, Capt. P. DOLMAN, San Francisco.

To New York, Neurological Institute, for instruction, Capt. H. M. WEGEFORTH, San Diego.

To report to the commanding general, Western Department, Capts. L. R. DUPUICH, A. M. GREGORY, Oakland; J. A. SHRECK, Redlands; R. R. BULLOCK, W. W. WYMORE, San Francisco; H. E. PIPER, Santa Cruz; Lieuts. N. BROWN, Jr., Bakersfield; C. W. HUTCHISON, Coalinga; J. T. CHRISTIAN, Galt; J. M. CONERTY, Los Angeles; C. L. EMMONS, Ontario; H. I. BLOCH, San Francisco; F. E. HULL, Tipton; W. A. JOYCE, Woodland.

Canal Zone

To Fort Oglethorpe for instruction, Capt. W. E. HUBBARD, Ancon.

To report to the comanding general, Panama Canal Department, Lieut. W. W. BRAITHWAITE, Ancon.

Colorado

To Camp Cody, N. M., Capt. J. W. FOLEY, Denver.

To Fort Oglethorpe for instruction, Capt. E. W. RAGSDALE, LaJunta; Lieut. F. M. HELLER, Pueblo.

To Fort Riley for instruction, Capt. J. B. HARTWELL, Colorado Springs; Lieuts. G. A. ASHBAUGH, Central City; M. D. CURRIGAN, Denver.

Connecticut

To Camp Devens, Mass., Lieut. F. T. FITCH, East Hampton.

To Camp Dix, N. J., Lieut. A. F. HEWITT, Stamford.

To Fort Oglethorpe for instruction, Capts. F. M. DICKINSON, Rockville; C. E. SIMONDS, Willimantic; E. R. KELSEY, Winstead; Lieuts. L. A. HA OOK, East Haddam; E. C. KIERNAN, New North Haven.

To Hoboken, N. J., Lieut. R. S. DAY, New Milford.

To report to the commanding general, Northeastern Department, Capt. B. E. BOSTWICK, New Milford.

District of Columbia

To Fort Oglethorpe for instruction, Capt. N. P. BARNES, Washington; Lieut. A. D. BUTZ, Washington.

To Newport News, Va., Capt. P. B. JOHNSON, Washington.

To Washington, D. C., Major J. CONSTAS, Washington.

Florida

To Camp Joseph E. Johnston, Fla., Capt. W. M. STINSON, Jacksonville.

To Fort Oglethorpe for instruction, Capt. H. E. PALMER, Tallahassee; Lieuts. H. E. CLINE, Haines City; G. E. BECKMAN, Jacksonville; E. G. PEEK, Ocala; I. J. BELCHER, Tarpon Springs.

Georgia

To Camp Greene, N. C., base hospital, Capt. G. D. AYER, Atlanta.

To Camp Jackson, S. C., base hospital, for instruction, Capt. T. J. COLLIER, Atlanta.

To F ruction, Lieuts. W. D. JENNINGS, Jr., Augusta Metasville; H. B. NUNNALLY, Monroe; C. W.

Idaho

To Denver, Colo., Capt. A. R. HULL, Nampa.

To Fort Riley for instruction, Capt. C. R. SCOTT, Twin Falls; Lieut. W. T. DRYSDALE, New Plymouth.

To report to the commanding general, Western Department, Lieut. C. F. HANMER, Salmon.

Illinois

To Army Medical School, Lieut. D. A. HUMISTON, Oak Park.

To Camp Custer, Mich., Lieut. G. B. MATHISEN, Chicago. Base hospital, Capts. J. W. CLARK, M. H. WORTHINGTON, Chicago; E. H. PARRY, Galesburg.

To Camp Grant, Ill., base hospital, Capt. B. HASELTINE, Chicago. Base hospital, for instruction, Capt. A. J. ROBERTS, Ottawa.

To Camp Pike, Ark., Capt. T. F. CONROY, Lieut. H. A. KRAUS, Chicago.

To Camp Sherman, Ohio, base hospital, for instruction, Capt. W. C. SMITH, Chicago.

To Camp Wheeler, Ga., base hospital, for instruction, Lieut. J. W. MILLER, Chicago.

To Camp Zachary Taylor, Ky., base hospital, Lieut. J. H. FRAZER, Chicago.

To Cape May, N. J., base hospital, Lieut. S. J. TAUB, Chicago.

To Fort Oglethorpe for instruction, Major R. C. BOURLAND, Rockford; Capts. F. W. BRIAN, Bloomington; R. R. DUFF, P. GRONNERUD, E. J. HOGLUND, L. J. ISAACS, A. E. PRICE, Chicago; A. F. MOORE, Dixon; W. J. CARTER, Mattoon; C. L. CARLTON, Moline; E. A. WALSH, Springfield; Lieuts. D. SCHOTT, Buckley; L. L. IRWIN, Bloomington; E. H. ANDERSON, F. R. BUTTERFIELD, J. A. COUSINS, L. J. P. DE ALARID, W. G. EPSTEIN, R. R. HARRINGTON, D. L. HYDE, V. N. LAMARRE, J. W. McLAUGHLIN, A. N. OYEN, H. L. THOMPSON, V. K. TOMHAGEN, Chicago; E. C. PARK, Jr., Flora; J. H. WEDIG, Granite City; J. I. MERSHON, Keithsburg; F. M. HAGANS, Lincoln;

D. G. WELLS, McHenry; J. L. SNAVELY, Sterling; C. O. HIGHSMITH, West Union.

To Fort Riley, Lieuts. J. J. EGAN, Chicago; R. E. UTLEY, Oak Park. For instruction, Lieuts. G. C. BUNTIN, Benton; B. AUGUSTUS, J. E. BROOKS, T. E. DOYLE, W. Z. FELSHER, J. H. HUTTON, W. J. MULHOLLAND, J. M. VITULLO, Chicago; H. H. HEUCK, Sigel; L. V. BOYNTON, Vermont.

To New Haven, Conn, Capt. H. H. BAY, Lieut. E. B. FREILICH, Chicago.

To report to the commanding general, Central Department, Capt. G. E. PUMPHREY, Carthage; Lieuts. T. GRIFFITHS, Chicago; H. A. BARKEY, Elmhurst.

Indiana

To Camp Beauregard, La., base hospital, for instruction, Capt. G. S. GREENE, Gary.

To Camp Custer, Mich., base hospital, Capt. E. H. KATTERHENRY, Indianapolis.

To Camp Dodge, Iowa, base hospital, Lieut. J. H. BULL, Indianapolis.

To Camp Pike, Ark., Lieut. J. R. CROWDER, Sullivan.

To Camp Shelby, Miss., Capt. L. M. GENTLE, Richmond.

To Camp Zachary Taylor, Ky., Lieut. C. W. COREY, Hartford City. Base hospital, Capt. H. K. LANGDON, Indianapolis.

To Colonia, N. J., Lieut. C. A. BALLARD, Logansport.

To Fort Oglethorpe for instruction, Capts. H. A. DUEMLING, Fort Wayne; B. A. BROWN, Indianapolis; J. W. BAXTER, C. E. BRISCOE, New Albany; W. L. OWEN, South Bend; C. L. BOYD, Vincennes; A. I. DONALDSON, Washington; Lieuts. E. CARTER, Bringhurst; C. R. GRAHAM, Bryant; G. R. FINCH, Center Point; I. E. BOOHER, Connersville; C. R. BASSLER, Elkhart; J. BENZ, Hardinsburg; T. O. MORRIS, Hobbs; J. W. CANADAY, G. W. KOHLSTAEDT, C. W. ROLLER, Indianapolis; A. A. REED, Jeffersonville; F. S. CUTHBERT, Kingman; O. D. HUTTO, Kokomo; B. M. HUTCHINSON, Mishawaka; J. E. NIXON, Portland; J. W. RICKER, Terre Haute.

To Fort Riley for instruction, Lieuts. G. F. SMITH, Lawrenceburg; V. L. HODGES, St. Paul; N. A. BAKER, Valparaiso; S. C. WAGNER, Wakarusa.

To New Haven, Conn., Capts. E. A. CRULL, Fort Wayne; A. HENRY, Indianapolis. Yale Army Laboratory School, Lieut. J. E. ROGERS, Marion.

To report to the commanding general, Central Department, Lieut. B. F. CHAMBERS, Lyons.

Iowa

To Camp Dodge, Iowa, base hospital, Capt. L. M. COFFEY, Keokuk.

To Camp Grant, Ill., base hospital, Capt. E. A. CANTONWINE, Dubuque.

To Camp Pike, Ark., Lieut. T. A. HOBSON, Parkersburg.

To Fort Oglethorpe for instruction, Capt. M. B. DUNNING, Conway.

To Fort Riley for instruction, Capts. A. B. DEERING, Boone; J. P. REDMOND, Dysart; H. C. HULL, Washington; Lieuts. R. A. BECKER, Anita; W. A. COOPER, Bayard; F. S. LEONARD, Cascade; T. J. DORSEY, Clare; P. G. INGERSOLL, Dunlap; C. W. PATTON, Laurel; F. W. NEWELL, Ottumwa.

To New Haven, Conn., Yale Army Laboratory School, for instruction, Capt. C. B. LUGINBUHL, Des Moines.

Kansas

To Camp Custer, Mich., base hospital, for instruction, Capt. J. L. EVANS, Wichita.

To Camp Pike, Ark., base hospital, for instruction, Lieut. A. W. FEGTLY, Douglass.

To Fort Oglethorpe for instruction, Lieut. O. O. BARKER, Muscotah.

To Fort Riley for instruction, Lieuts. J. L. WENTWORTH, Arkansas City; F. H. BELL, Baldwin; W. L. DAVIS, Corning; J. W. GRAHAM, Highland; E. M. MIERS, Salina; D. L. STEWART, Scranton; G. D. M. LAMBDIN, Sedan; W. H. POPE, Selden; B. ANDERSON, Victoria.

Kentucky

To Camp Zachary Taylor, Ky., Capt. S. S. PRATHER, Louisville.

To Fort Oglethorpe for instruction, Capts. O. R. REESOR, Campbellsville; H. F. WILSON, Covington; M. BELL, Eminence; E. M. FREY, Guthrie; D. H. ERKILETIAN, Hopkinsville; L. R. GORDON, Lexington; G. A. COOK, North Middletown; Lieuts. J. C. WHEELER, Caney; W. P. NICHOLS, Chaplin; J. T. BATTE, Covington; O. L. MAY, Danville; J. C. SNOW, Henshaw; A. HOLDERFIELD, Louisville; J. L. PUTNAM, Penick; N. A. BAILEY, Valley View.

Louisiana

To Camp Beauregard, La., Capt. J. A. ESTOPINAL, New Orleans; Lieuts. J. H. McCAA, Baton Rouge; C. P. MAY, New Orleans.

To Fort Oglethorpe for instruction, Lieuts. L. W. HOLLOMAN, Alexandria; L. I. TYLER, Grangeville; J. BATH, S. GEISMAR, P. J. KAHLE, J. T. NIX, Jr., New Orleans.

Maine

To Fort Oglethorpe for instruction, Lieut. M. P. HAMBLETON, Augusta.

To Hoboken, N. J., Lieut. A. M. ROSS, Farmington.

To report to the commanding general, Northwestern Department, Capt. L. C. BUNKER, Waterville.

Maryland

To Camp Hancock, Ga., base hospital, Lieut. R. T. ABERCROMBIE, Baltimore.

To Fort Oglethorpe for instruction, Capt. J. C. COBEY, Frostburg; Lieuts. M. W. AARONSON, J. E. CUMMINS, Baltimore.

To New Haven, Conn., Yale Army Laboratory School, for instruction, Lieut. F. W. HACHTELL, Baltimore.

Massachusetts

To Camp A. A. Humphreys, Va., Capt. N. G. TRUEMAN, Hathorne; Lieut. C. A. BONNER, Worcester.

To Camp Devens, Mass., Capt. A. U. F. CLARK, West Boro; Lieut. J. J. CONDRICK, Brockton. Base hospital, Capt. J. NIGHTINGALE, Worcester; Lieut. J. A. GREENE, Cambridge.

To Camp Wadsworth, S. C., Lieut. P. J. FLEMING, Boston.

To Camp Wheeler, Ga., base hospital, Lieut. W. R. SISSON, Boston.

To Fort Oglethorpe for instruction, Capts. E. A. CUNNINGHAM, Belmont; G. L. VOGEL, Boston; C. M. HUTCHINSON, Cambridge; F. G. BARNUM, Coolidge Corner; C. D. HUSSEY, Franklin; D. G. HOYT, Leominster; G. F. DOW, Reading; L. R. BRAGG, Webster; W. I. CLARK, Jr., Worcester; Lieuts. W. O. BARTLETT, B. B. JONES, N. J. KING, F. J. McVEY, Boston; W. B. LANCHARD, Framingham; T. N. STONE, Haverhill; F. A. O'REILLY, Lawrence; P. A. HOYT, Ludlow; A. J. HEWITT, Newburyport; A. W. MYRICK, Randolph; F. C. CARLTON, State Farm; C. W. BRUNINGHAUS, Worcester.

To Hoboken, N. J., Capt. L. H. BEALS, Hatfield.

To Lakewood, N. J., Lieut. T. D. CUNNINGHAM, Boston.

To Mineola, Hazelhurst Field, for instruction, Lieut. E. B. GOODALL, Boston.

To New York, Neurological Institute, *for intensive training,* Lieut. W. E. R. BASCH, Winthrop.

To report to the commanding general, Northeastern Department, Capts. J. A. BRYER, Attleboro; B. A. GRAVES, Dorchester.

Michigan

To Camp Custer, Mich., base hospital, for instruction, Lieut. E. A. LINGER, Rockland.

To Camp Lee, Va., Lieut. J. J. DREAK, Detroit.

To Camp Wheeler, Ga., Capt. H. W. EMERSON, Ann Arbor.

To Fort Oglethorpe for instruction, Capt. B. G. McGARRY, Fenton; Lieuts. J. G. GAGE, Battle Creek; W. F. CLUTE, Clare; W. D. BARRETT, R. C. BURT, F. V. BURNHAM, J. A. CONLEY, S. M. CRAIG, F. F. GARDNER, S. W. GREEN, J. W. WARREN, Detroit; W. J. CONOVER, Evart; F. D. GERMAN, Franklin; L. M. POWER, Hancock; P. F. MORSE, Highland Park; E. G. BELLINGER, Lansing; F. K. LENFESTEY, Mount Clemens; C. C. BENJAMIN, Navarre.

Minnesota

To Camp Custer, Mich., Lieut. E. HABERMAN, Osakis. Base hospital, for instruction, Capt. J. D. UTLEY, St. Paul.

To Camp Devens, Mass., base hospital, Lieut. F. W. SCHLUTZ, Minneapolis.

To Camp Dodge, Iowa, base hospital, Capt. H. NEWHART, Minneapolis.

To Denver, Colo., Capt. A. G. KESSLER, Battle Lake.

To Fort Oglethorpe for instruction, Capt. W. LERCHE, St. Paul; Lieut. K. A. DANIELSON, Litchfield.

To Fort Riley for instruction, Capt. W. H. REPLOGLE, Wabasha; Lieuts. G. M. DORAN, N. NEDERGNARD, A. SIVERTSEN, Minneapolis; O. S. OLSON, Morgan Park; J. R. TAYLOR, Rochester; H. J. ROTHSCHILD, St. Paul.

Mississippi

To Camp Shelby, Miss., base hospital, for instruction, Lieut. C. E. MULLENS, Natchez.

To Fort Oglethorpe for instruction, Capt. C. CHAMPENOIS, Electric Mills; Lieuts. J. W. PRIMROSE, Clarksdale; J. M. MANN, Crowder; V. D. FRANKS, Hinchcliff; C. DAVIS, Morgan City; S. F. HILL, Prairie Point.

Missouri

To Camp Bowie, Texas, base hospital, for instruction, Capt. W. B. YOUNG, St. Louis; Lieut. F. G. BEARD, Maitland.

To Camp Grant, Ill., for instruction, Capt. W. F. SCHMID, St. Joseph.

To Camp Logan, Texas, base hospital, Capt. O. B. MAYES, Centralia. For instruction, Capt. G. S. DRAKE, St. Louis.

To Camp Pike, Ark., Lieut. V. V. WOOD, St. Louis.

To Camp Sevier, S. C., base hospital, Capt. A. L. ANDERSON, Springfield.

To Fort Oglethorpe for instruction, Capts. G. A. McCULLOCH, Excelsior Springs; L. B. Hayden, Livermore Falls; W. D. AUFDERHEIDE, St. Louis; Lieuts. F. V. KEELING, Elsberry; C. G. W. JUNGK, St. Louis.

To Fort Riley, Lieut. J. K. CHIPPS, New Hampton. For instruction, Capts. A. J. DETWEILER, Hannibal; C. R. BUREN, Princeton; L. J. DANDURANT, St. Joseph; Lieuts. S. B. BUCK, Anderson; C. M. GRACE, Chillicothe; F. F. FARR, A. E. JONES, N. E. LAKE, H. E. THOMASON, Kansas City; J. A. HANCKS, Koenig; E. J. HAIRS, Laredo; J. B. SCOTT, Marceline; K. H. HALL, St. Louis.

To report to the commanding general, Central Department, Lieut. E. H. KELLY, Kansas City.

To Washington, D. C., Lieut. L. S. N. WALSH, St. Louis.

Montana

To Camp Dodge, Iowa, base hospital, Capt. W. R. MORRISON, Billings.

To Camp Lewis, Wash., base hospital, Capt. F. C. DAVIS, Lewiston.

To Fort Riley for instruction, Lieut. L. R. MACBURNEY, Great Falls.

Nebraska

To Camp Custer, Mich., base hospital, for instruction, Capt. D. C. HILTON, Lincoln.

To Camp Dodge, Iowa, base hospital, Capt. J. P. WILLIAMS, Lincoln.

To Camp MacArthur, Tex., to examine the command for nervous and mental diseases, Capt. B. F. WILLIAMS, Lincoln.

To Denver, Colo., Lieut. M. J. POWELL, Fairbury.

To Fort Oglethorpe for instruction, Lieuts. C. H. SHEETS, Cozad; G. B. POTTER, Shelby.

To Fort Riley for instruction, Capts. R. H. BURRELL, Creighton; P. H. Ellis, Omaha; E. A. CREIGHTON, Red Cloud; Lieuts. A. CAULEY, Humphrey; C. D. EBY, Leigh; N. H. RASMUSSEN, Scotts Bluff; I. H. LEVIN, Venango.

Nevada

To Fort Oglethorpe for instruction, Lieut. R. A. BOWDLE, East Ely.

New Jersey

To Camp Dix, N. J., base hospital, Lieut. J. R. COMMORATO, Jersey City.

To Fort Oglethorpe for instruction, Capts. T. SENSEMAN, Atlantic City; G. C. COATES, Butler; Lieuts. G. W. FINKE, Hackensack; J. M. JIMENEZ, Haddonfield; A. B. COULTAS, Madison; A. P. DONOHO, Merchantville; J. B. CASALE, H. B. EPSTEIN, E. A. ILL, Newark; T. BENDER, C. MAZZARELLA, Paterson; F. G. CLARK, White House Station.

To New York, Neurological Institute, for instruction, Major J. J. BRODERICK, Jersey City.

To Norfolk State Hospital, Mass., Lieut. E. A. EHLERS, Summit.

New Mexico

To Camp Cody, N. M., Capt. R. L. HUST, Albuquerque; base hospital, Capt. C. S. LOSEY, East Las Vegas. Base hospital, for instruction, Lieut. C. W. FULTON, Raton.

To Camp Logan, Texas, Capt. F. L. ANDERSON, Roswell.

To Fort Riley for instruction, Lieuts. C. B. ELLIOTT, W. W. JOHNSON, Dawson.

To New Haven, Conn., Yale Army Laboratory School, for instruction, Lieut. J. B. VAN ATTA, Albuquerque.

New York

To Camp Custer, Mich., Lieut. S. N. MACVEAN New York.

To Camp Devens, Mass., base hospital, Major W. S. GOODALE, Capt. W. S. DRISCOLL, Buffalo. Base hospital, for instruction, Capts. L. F. JOY, Fulton; H. G. CASE, Syracuse. For instruction, Lieut. H. POMERANZ, New York.

To Camp Dix, N. J., base hospital, Lieuts. C. W. BROWN, C. SHOCKOFF, Brooklyn. Base hospital, for instruction, Capt. J. A. SHIELDS, Brooklyn; Lieut. J. E. WHITE, Malone.

To Camp Hancock, Ga., base hospital, Lieut. J. E. WINDSIEL, Amsterdam.

To Camp Jackson, S. C., base hospital, for instruction, Capt. J. H. LEWIS, Buffalo.

To Camp Lee, Va., Lieuts. T. L. CRAIG, Davenport; M. E. LEWIS, New York.

To Camp Meade, Md., Lieuts. A. L. CHILD, R. K. JOHNSON, Brooklyn.

To Camp Pike, Ark., base hospital, for instruction, Capt. R. H. V. DANN, Elmira.

To Camp Sevier, S. C., base hospital, for instruction, Capt. J. H. EVANS, Buffalo.

To Camp Shelby, Miss., to examine the command for nervous and mental diseases, Capt. D. O. THOMPSON, Buffalo.

To Camp Sheridan, Ala., base hospital, Capt. W. L. PHILLIPS, Buffalo.

To Camp Wadsworth, S. C., base hospital, Capt. C. HERRMAN, New York.

To Camp Wheeler, Ga., base hospital, Lieut. C. M. SAUTTER, New York.

To Danville, N. Y., Lieut. H. R. ETHERIDGE, Fort Slocum.

To Fort Jay, N. Y., Capt. F. L. CHRISTIAN, Elmira.

To Fort Oglethorpe for instruction, Major G. F. CHANDLER, Kingston; Capts. T. L. FOGARTY, Brooklyn; T. W. CONNORS, E. P. LOTHROP, Buffalo; C. V. BROOK[illegible] WHITING, Canisteo; F. H. STARR, Corning; [illegible] Gloversville; E. T. O'CONNOR, Irvington; E. [illegible] TOBIN, H. A. VEDDER, L. A. WING, New York; G. T. IMRIE, W. B. LARGE, Rochester; J. J. BUETTNER, Syracuse; H. R. WILLSE, Westfield; Lieuts. L. M. BROWN, Astoria; H. BLAUVELT, L. L. COHAN, R. A. GERBER, F. B. GILLESPIE, J. A. O'REILLY, Brooklyn; A. C. CALLAHAN, J. J. KOHLHS, E. R. LINKLATER, Buffalo; C. L. CAREY, Elmira; A. J. STEWART, Falconer; J. S. EDLIN, J. M. KUTISKER, Fort Slocum; R. C. FESS, Jamestown; H. U. CRAMER, Lockport; J. L. CROFTS, Middleville; R. S. BREAKEY, Monticello; J. ARONSON, N. N. BLOOM, P. M. BUTTERFIELD, A. CANFIELD, J. H. CHILDS, S. COHEN, I. ECKERT, W. W. ELDRIDGE, J. HEIMAN, H. S. JACOBS, J. M. MAYER, R. D. MOFFETT, E. M. OVERTON, A. ROBERTIELLO, I. F. SHAPIRO, M. J. SIEGELSTEIN, L. E. SPROUT, New York City; A. H. PAINE, Rochester; J. E. GROFS, Rome; G. L. WRIGHT, Syracuse; H. C. STORRS, Thiells; J. M. GRIFFIN, Warrensburg.

To Hoboken, N. J., Capt. E. R. FISKE, Brooklyn; Lieut. P. B. BROCKWAY, Brooklyn.

To Lakewood, N. J., Capt. R. G. SNYDER, New York.

To New Haven, Conn., Capt. J. J. LLOYD, Rochester; Lieuts. W. A. McLAREN, Brooklyn; F. J. LENNON, Buffalo. Yale Army Laboratory School, for instruction, Capt. W. F. JACOBS, Buffalo; Lieuts. S. KOROWITZ, New York City; W. I. WALSH, Troy.

To Newport News, Va., Lieuts. F. E. BRUNDAGE, Buffalo; I. T. BROADWIN, New York.

To New York, Lieut. R. T. REID, New York. Neurological Institute, for instruction, Capt. J. R. HARDING, Elmira.

To report to the commanding general, Eastern Department, Capts. A. K. BRODIE, Derby; E. E. BAUER, Owego; Lieut. P. J. BARRETT, Tupper Lake.

To Rockefeller Institute for instruction, Lieut. A. HOFHEIMER, New York.

North Carolina

To Fort Oglethorpe for instruction, Capt. C. C. ORR, Asheville; Lieut. R. O. MILBEE, Cove City.

North Dakota

To Fort Oglethorpe for instruction, Lieut. O. B. NUGENT, Harvey.

To Fort Riley for instruction, Capt. L. B. DOCHTERMAN, Williston; Lieut. G. H. COFFIN, Drake.

Ohio

To Camp Custer, Mich., base hospital, Capt. G. H. HOLT, Cincinnati.

To Camp Dix, N. J., Capt. E. H. HARSH, Cleveland.

To Camp Meade, Md., Lieut. H. R. GRAVES, Ashtabula.

To Camp Pike, Ark., base hospital, for instruction, Lieut. F. J. KEELEY, Cleveland.

To Camp Sheridan, Ohio, base hospital, for instruction, Capt. L. S. BROOKHART, Cleveland.

To Camp Sherman, Ohio, base hospital, Lieut. C. H. HOFFHINE, Columbus. Base hospital, for instruction, Lieut. E. R. ARN, Dayton.

To Camp Zachary Taylor, Ky., base hospital, for instruction, Capt. W [illegible] lo; Lieut. R. W. CALDWELL, Jackson. [illegible] t. G. B. PARISEN, Toledo. For instruction, [illegible] Albany; D. W. PHILO, Fremont; H. W. W. [illegible] H. PRICE, Stony Ridge; R. J. MORGAN, [illegible] GREGG, Akron; G. E. MOATS, Antwerp; [illegible] W. KEHRER, Bucyrus; R. H. CLEARY, [illegible] R. STEVENSON, Cincinnati; R. J. BEELS, D. SELMAN, H. E. YODER, Cleveland; W. J. HULTENSCHMIDT, Cleveland Heights; J. M. THOMAS, Columbus; C. W. DEWEY, Conneaut; M. E. COY, Dayton; F. R. HARRISON, East Liverpool; C. W. EMMONS, Fairport Harbor; G. K. DENNIS, Jamestown; E. L. CRUM, Lodi; W. D. GARDNER, Plain City; W. A. BRAUNLIN, Portsmouth; A. SILVER, Sidney; V. L. MAGERS, Tiffin; J. M. FRICK, Toledo; A. C. HUNTER, West Alexandria; L. H. WHISLER, Willard; C. BURTON, Willow Wood.

To report to the commanding general, Central Department, Capt. T. A. EVANS, Columbus; Lieuts. A. B. DEVERS, Cincinnati; W. H. MERRIAM, Mount Eaton; H. H. EWING, Willard.

To Walter Reed General Hospital, Capt. R. A. RICE, Columbus.

Oklahoma

To Camp Beauregard, La., base hospital, for instruction, Capt. P. A. SMITHE, Enid.

To Camp Travis, Texas, Lieut. E. E. DARNELL, Clinton.

To Fort Oglethorpe for instruction, Capts. J. A. GILLIS, Frederick; J. D. BEWLEY, J. H. WOODCOCK, Miami.

To Fort Riley for instruction, Lieuts. J. L. BROUGH, Coyle; G. Y. McKINNEY, Henryetta; G. W. AMERSON, Milo; J. M. FORTSON, Tecumseh.

Oregon

To Camp Lewis, Wash., Lieuts. H. A. CANFIELD, Drain; B. R. BROOKE, Portland. Base hospital, Lieut. G. E. HENTON, Portland. For instruction, Capts. W. M. CAMPBELL, C. C. MOORE, Portland.

To Fort Oglethorpe for instruction, Lieut. P. W. BYRD, Salem.

To Fort Riley for instruction, Lieuts. A. H. CANTRILL, Portland; J. F. HOSCH, Redmond.

To report to the commanding general, Western Department, Lieuts. U. C. COE, Bend; H. DENMAN, Crane; O. C. DIXON, Gold Hill; H. B. HAILE, Madras.

Pennsylvania

To Buffalo, N. Y., Lieut. M. M. MACKALL, Monaca.

To Camp Beauregard, La., base hospital, for instruction, Capt. K. I. SANES, Pittsburgh.

To Camp Crane, Pa., Lieut. W. J. PROBST, Pittsburgh.

To Camp Hancock, Ga., base hospital, for instruction, Lieut. W. R. CAMPBELL, East Smithfield.

To Camp Jackson, S. C., base hospital, for instruction, Capts. J. L. ATLEE, Lancaster; W. M. CAMPBELL, Pittsburgh.

To Camp Lee, Va., Lieut. H. J. BENZ, Pittsburgh.

To Camp Meade, Md., Lieuts. F. S. BAKEWELL, Greenville; A. R. MEGAHAN, Latrobe. For instruction, Capt. C. C. MECHLING, Pittsburgh.

To Fort Oglethorpe for instruction, Capts. R. A. THOMPSON, Butler; H. S. STONE, Franklin; H. B. MEAD, New Brighton; H. P. LEOPOLD, H. LOWENBURG, C. B. WORDEN, Philadelphia; L. H. CHEESMAN, Pittsburgh; G. R. DRAKE, Plymouth; C. O. BROWN, Scranton; Lieuts. E. B. HENRY, Bellevue; F. R. BRADEN, Coraopolis; I. C. DUNCAN, East McKeesport; J. H. JOHNSON, Glenmore; A. A. BASIL, W. O. LUBKEN, Johnstown; N. H. JENKINS, Kingston; R. L. YOUNG, Ludlow; W. R. BUCKLEY, Mount Carmel; O. H. WILSON, Philadelphia; W. E. BOOHER, F. W. BREMER, H. G. CARMALT, L. M. MITCHELL, H. R. WOODS, Pittsburgh; W. S. ADAMS, Sykesvile; O. K. GRIER, Wilkes-Barre; A. M. BENSHOFF, Windber.

To New Haven, Conn., Yale Army Laboratory School, for instruction, Capt. W. L. STEEN, New Castle; Lieut. A. D. DYE, Masten.

To Plattsburg, N. Y., Capt. C. C. WHOLEY, Pittsburgh.

To Walter Reed General Hospital, D. C., Capt. C. H. HAYES, Pittsburgh.

Rhode Island

To Camp Dix, N. J., base hospital, for instruction, Lieut. J. J. HEALEY, Providence.

To Camp Gordon, Ga., base hospital, for instruction, Lieut. J. G. WALSH, Providence.

To Fort Oglethorpe for instruction, Capt. M. E. VANCE, Pawtucket; Lieuts. L. J. A. LEGRIS, Phenix; V. K. PAPAVASILION, Providence.

South Carolina

To Fort Oglethorpe for instruction, Lieut. O. P. WISE, Saluda.

South Dakota

To Camp Dodge, Iowa, base hospital, for instruction, Capt. R. J. JACKSON, Rapid City.

To Fort Oglethorpe for instruction, Capt. F. M. MAHIN, Lake Preston.

Tennessee

To Camp Meade, Md., Lieut. P. S. WILLIAMS, Oakdale.

To Fort McHenry, Md., Lieut. F. B. MOORE, Memphis.

To Fort Oglethorpe for instruction, Capt. H. M. CASS, Johnson City; Lieuts. W. H. SMITH, Brunswick; F. A. NILES, Daysville; A. G. BENTLEY, Quite.

To Fort Riley for instruction, Lieut. E. A. GUYNES, Knoxville.

Texas

To Camp MacArthur, Texas, base hospital, for instruction, Capts. H. A. McDANIEL, Bonham; S. A. WOODWARD, Fort Worth.

To Camp Travis, Texas, Lieut. C. M. COVINGTON, Montgomery. Base hospital, for instruction, Capts. W. W. SAMUELL, Dallas; L. M. WEINFIELD, San Antonio.

To Fort Oglethorpe for instruction, Capts. W. E. CHILTON, Fort Worth; J. H. BRICE, Lamesa; Lieuts. O. W. ROBINSON, Bairdstown; C. M. IRWIN, Charlotte; C. T. BRADFORD, Klondike; J. H. VAUGHAN, Liberty Hill; J. R. ELLIOTT, Palacios; A. T. HAYS, Tulia.

To Fort Riley for instruction, Capt. W. E. CAMPBELL, Ennis; Lieuts R. C. SHANKS, Bells; B. F. CHAMBERS, Bullard; G. L. GRAY, Donna; H. G. BEVIL, Doucette; C. C. HILL, Grapeland; J. D. DAVIS, Munday; G. L. LEWIS, San Angelo; B. L. CHIPLEY, San Antonio; A. L. PETERSON, Texarkana.

To Fort Worth, Texas, base hospital, Capt. M. E. GILMORE, Fort Worth.

To report to the commanding general, Southern Department, Lieuts. T. H. ELLIS, Clarendon; C. S. CREW, DeKalb; O. L. WOODALL, Goree.

Utah

To Fort Riley for instruction, Lieut W. H. MOSSLER, Modena.

To report to the commanding general, Western Department, Capts. G. H. MAGHEE, Salt Lake City; F. E. ESTES, Standardsville.

Virginia

To Fort Oglethorpe for instruction, Capts. J. C. BODOW, Hopewell; J. W. HUNTER, JR., Norfolk; Lieuts. T. W. EDMUNDS, Danville;

G. T. FAUST, Dorchester; B. L. NAIMAN, Hopewell; O. A. WEATHERBY, Raven; W. B. *FELLERS*, Roanoke; C. W. JENNINGS, Williamsburg.

To Newport News, Va., Lieut. G. R. FISHER, New Hope.

Washington

To Camp Lewis, Wash., Lieuts. H. A. GREENWALD, Kettle Falls; C. BALLANCE, L. A. FULLERTON, Seattle; H. M. MAKINS, Selah; A. P. HUGHES, Spokane.

To report to the commanding general, Western Department, Lieut. L. S. ROACH, Mount Vernon.

West Virginia

To Camp Sevier, S. C., Lieut. R. L. HUNTER, Jarold's Valley.

To Camp Sheridan, Ala., base hospital, for instruction, Lieut. G. L. VIEWEG, Wheeling.

To Camp Wadsworth, S. C., Capt. L. F. MILLIKEN, Blair.

To Fort Oglethorpe for instruction, Capts. J. H. CHAPMAN, Brown; H. G. NICHOLSON, Charleston; H. H. PETTRY, Lawson; D. C. CASTO, Parkersburg; S. H. BURTON, Weston; G. B. CAPITO, White Sulphur Springs; Lieuts. A. G. De FOE, Bruceton Mills; I. G. ROGERS, Cairo; R. M. RILEY, Clarksburg; D. J. *RUDASILL*, Kingwood; B. F. SOMMER, Leon; F. W. BILGER, Maybeury; H. E. GAYNOR, Parkersburg; T. E. RYMER, Ripley; O. M. STAATS, Wheeling.

Wisconsin

To Camp Grant, Ill., base hospital, Capt. W. A. SMITH, Boyd.

To Fort Oglethorpe for instruction, Capt. R. J. GOGGINS, Oconto Falls; Lieuts. I. G. DAVIS, Arcadia; W. M. JOHNSTON, *Dale*; F. C. PYNN, Delavan; F. S. FISCHER, Milwaukee; A. J. LOUGHNAN, *Oconomowoc*; M. M. BUNCH, Oshkosh; W. J. HOMMEL, Whitewater.

To Fort Riley, as tuberculosis examiner, Capt. J. W. LOCKHART, Oshkosh. For instruction, Lieuts. R. D. *JAMIESON*, *La Crosse*; *G. E.* FORKIN, Menasha; W. E. FOX, W. G. HYDE, Milwaukee; L. C. COMBACKER, Osceda.

To New Haven, Conn., *Yale* Army Laboratory School, for instruction, Major G. C. RUHLAND, Milwaukee.

Wyoming

To Fort Riley for instruction, Capt. E. G. DENISON, Sheridan; Lieuts. I. N. FROST, *Casper*; T. F. Hamilton, Crosby; J. W. PRICE, Laramie.

To report to the commanding general, Western Department, Capt. G. M. SELBY, Sheridan.

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Arkansas

To Camp Jackson, S. C., as tuberculosis examiner, from New Haven, Capt. E. E. HOLT, Mena.

California

To Camp Shelby, Miss., from Camp Jackson, Lieut. J. A. STEED, Dalton.

To report to the commanding general, Western Department, Lieut. F. CHANNOSIAN, Fresno.

District of Columbia

To East Norfolk, Mass., from the Surgeon-General's Office, Lieut.-Col. W. H. SMITH.

Illinois

To Camp Jackson, S. C., as tuberculosis examiner, from New Haven, Capt. A. H. BEEBE, Stillman Valley.

To Camp Meade, Md., evacuation hospital, from Fort Oglethorpe, Lieut. A. G. GRAN, Chicago.

To Camp Shelby, Miss., from Camp Jackson, Capts. W. YATES, Bonfield; E. P. STAFF, Ramsey.

To Fort Des Moines, Iowa, from Fort Oglethorpe, Capt. J. MYERS, Chicago.

To Fort Hancock, N. J., from Fort Monroe, Lieut. C. B. ALEXANDER, Chicago.

To Washington, D. C., Surgeon-General's Office, from Garden City, Lieut. T. A. WAYLAND, Dallas City.

Indiana

To Camp Abraham Eustis, Va., from Fort Monroe, Lieut. W. F. JOHNSON, Indianapolis.

To Camp Shelby, Miss., from Camp Jackson, Capts. J. T. HAZEL, Freedom; B. A. BROWN, Indianapolis; H. M. SCHULTZ, Logansport.

Iowa

The following order has been revoked: *To Camp Greene, N. C.*, base hospital, from Southern Department, Capt. E. M. P. SWARD, Glenwood.

Kentucky

To Camp A. A. Humphreys, Va., as tuberculosis examiner, from New Haven, Lieut. G. M. WELLS, Summer Shade.

Maine

To Camp Jackson, S. C., as tuberculosis examiner, from New Haven, Lieut. E. B. FRISBEE, Bridgeton.

Maryland

To Camp Jackson, S. C., as tuberculosis examiner, from New Haven, Lieut. W. A. BRIDGES, Towsen.

To Camp Shelby, Miss., to examine the troops for cardiovascular diseases, from Camp Upton, Major A. D. ATKINSON, Baltimore.

Massachusetts

To Camp Abraham Eustis, Va., from Brockton, Capt. J. J. McNAMARA, Brockton.

To Camp Shelby, Miss., from Camp Jackson, Lieut. N. HOLDEN, Malden.

To Rockefeller Institute, for instruction in the treatment of infected wounds, and on completion *to his proper station*, from Camp Beauregard, Major G. H. GRAY, Lynn.

Michigan

To Camp A. A. Humphreys, Va., as tuberculosis examiner, from New Haven, Lieut. A. W. SCHMIDT, Gay.

To Newport News, Va., Lieut. F. H. COLE, Detroit.

Minnesota

To Camp Jackson, S. C., as tuberculosis examiner, from New Haven, Lieut. L. G. GUYER, Waseca.

Nebraska

To Camp Shelby, Miss., from Camp Jackson, Capt. F. P. DORSEY, Hartington.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Camp Grant, Ill.*, base hospital, for instruction, from Fort Riley, Lieut. G. E. PETERS, Bloomfield.

New York

To Army Medical School, for instruction, Lieut. W. D. GILL, New York.

To Camp A. A. Humphreys, Va., from Fort Oglethorpe, Capt. J. A. CONWAY, Hornell.

To Camp Bowie, Texas, from Camp Abraham Eustis, Capt. T. W. JENKINS, Albany.

To Camp Hancock, Ga., as orthopedic surgeon, and *on completion to Boston, Mass.*, Harvard Graduate School of Medicine, for instruction, from Fort Oglethorpe, Lieut. J. B. L'EPISCOPO, Brooklyn.

To Camp Jackson, S. C., as tuberculosis examiner, from New Haven, Lieuts. M. E. BORK, Buffalo; M. GREENWALD, New York; C. M. MANN, Petersburg.

To Camp Meade, Md., for instruction, from Jefferson Barracks, Capt. E. W. BROWN; Mount Kisco.

To Williamsbridge, N. Y., from Fort Ontario, Capt. B. S. MOORE, Syracuse.

The following order has been revoked: *To Camp McClellan, Ala.*, to examine the troops for cardiovascular diseases, from Lakewood, Lieut. A. TOWBIN, Flushing.

Ohio

To Camp Shelby, Miss., from Camp Jackson, Capt. H. PRIMM, Ravenna.

Pennsylvania

To Camp Jackson, S. C., as tuberculosis examiner, from New Haven, Lieut. L. G. FLANNERY, Philadelphia.

To Camp Sherman, Ohio, from Syracuse, Lieut. J. N. CAMP, Foxburg.

To Fort Oglethorpe, for instruction, Lieut. D. RIESMAN, Philadelphia.

South Carolina

To Camp Shelby, Miss., from Camp Jackson, Lieut. C. HOUSTON, Florence.

Tennessee

To Mays Landing, N. J., from Camp Devens, Capt. T. A. R. JONES, Knoxville.

Texas

To Newport News, Va., from Fort Oglethorpe, Lieut. T. M. GORDON, Stephenville.

Wisconsin

To Camp Crane, Pa., evacuation ambulance company, from Fort Riley, Capt. M. E. RIDEOUT, Hortonville.

To Washington, D. C., Surgeon-General's Office, from Camp Custer, Capt. B. H. HOLMES, Delavan.

ORDERS TO OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Asst. Surg.-General C. C. PIERCE, directed to proceed to New York City for conference relative to post war work.

Sen. Surg. G. M. Magruder, proceed to Kansas City, Mo., to establish venereal disease control measures in Kansas City and adjacent cities.

Surg. EDWARD FRANCIS, relieved from duty in influenza control in Pennsylvania and assume charge of extra-cantonment sanitation in the District of Columbia.

Acting Asst. Surg. J. M. BIEDLER, proceed to Richmond, Va., for organization of medical and sanitary work at the Government loading plant.

Acting Asst. Surg. RICHARD T. LEADER, relieved at Charlotte, N. C., proceed to Lincoln, Neb., to assume charge of venereal control work.

Acting Asst. Surg. C. W. WOOD, proceed to Burlington, Vt., relative to the inauguration of venereal disease control measures.

Asst. Sanitary Engr. SIDNEY BOWNE, relieved at Millington, Tenn., proceed to Charleston, S. C., for duty in extra-cantonment sanitation.

Asst. Sanitary Engr. M. G. PARSONS, relieved at West Point, Miss., proceed to Columbus, Ga., for duty in extra-cantonment zone sanitation.

Asst. Sanitary Engr. F. D. MESSENGER, proceed when convenient, to Brownsville, Texas, to investigate the public health value of contemplated improvements.

Asst. Sanitary Engr. FRANK R. SHAW, proceed to New Orleans, La., for conference relative to influenza control.

Chief Sanitary Insp. HARRY S. LUCAS, relieved from duty in the District of Columbia. Proceed to Florence, Ala., for duty in extra-cantonment sanitation.

Scientific Asst. W. H. PRICE, [illegible] Anniston, Ala., proceed to Washington, D. C., for duty in [illegible]

Asst. Director Educational Wor[illegible] New York City for conference relative to venereal disease control.

Asst. Director Educational Work DAVID ROBINSON, proceed to necessary points in the States of California, Oregon, Washington, Montana, Wyoming and Idaho for conference relative to instructions to drafted men to be carried out under government supervision.

Regional Field Director HARRY R. MINOR, proceed to necessary points in the states of Virginia, West Virginia, South Carolina, North Carolina and Georgia for conference relative to instructions to drafted men, to be carried out under government supervision.

Regional Field Director A. G. SPAULDING, proceed to necessary points in the states of Texas, Nebraska and Oklahoma for conference relative to instructions to drafted men, to be carried out under government supervision.

Association News

SUPPLEMENTARY REPORT OF THE WAR COMMITTEE

At the meeting of the Board of Trustees, held October 25, the War Committee submitted the following supplementary report covering the work done since the last annual session. The Board of Trustees received and directed that it be published in THE JOURNAL.

To the Board of Trustees of the American Medical Association:

This report of your War Committee is supplementary to that which the committee submitted to the House of Delegates at its meeting held in Chicago, June last. We repeat what was said at that time that the profession has responded for war service in a manner that has received universal favorable comment, and your committee is gratified to record the part which this Association has taken in this mobilization of the medical profession for war.

The Association's records show that more than 200,000 blank forms for making application for commission in the Medical Reserve Corps have been printed by the Association and circulated among physicians, and as a result upward of 30,000 applicants have been commissioned in the Army. In addition, more than 3,000 have been commissioned in the Navy.

The appeal of the Surgeon-General of April 3, 1918, was published in THE JOURNAL on April 13. This was more effective than any community propaganda could possibly have been. Since our last (June) report, according to the Association's record, the applications for commission in the Medical Corps were: June, 2,416; July, 2,841; August, 3,814; September, 4,171, and to October 24, 2,507; a total of 15,809 in four and a half months.

The American Medical Association has been the center of information to physicians. The replies to individual inquiries have involved several departments, and letters to individual physicians have averaged over 100 each week. In addition, since June 1, more than 5,000 pamphlets covering information pertaining to entrance into the Medical Corps have been distributed in response to individual requests. The expense incident to all this, including printing, postage, and other items, have been borne by the Association.

The American Medical Association has supplied state and county organizations with detailed information concerning physicians in their own communities who were available for civil and industrial practice, and has cooperated with its branch organizations in endeavoring to provide the services of additional physicians where the needs of a locality could not be met by physicians still active in these communities.

Early in the year, on the suggestion of the officers of the Association, the Provost Marshal-General requested the Surgeon-General to assign a medical officer to the office of the Provost Marshal-General in order that this medical officer might act as an adviser on the medical features of the Selective Service Regulations. Col. Frank Billings was assigned to this post.

As an outgrowth from this beginning, a medical division for the Provost Marshal-General's Office was created on August 1, which, at the present time, has a personnel of four medical officers and five enlisted men and clerks. The function of this medical division relates to the selection and induction of registrants together with the statistical details arising therefrom. This medical division in the Provost Marshal-General's Office has brought about more intimate relations between this office and that of the Surgeon-General of the Army. Through the coordination thus made possible, the physical examinations of registrants by the Selective Service Boards and those made at the cantonments and camps are being standardized.

Your committee congratulates the Association on the service which, by virtue of the information which it has made available, it has been able to render in the solution of medical questions that have arisen in connection with the execution of the Selective Service Regulations.

Although neither the Surgeon-General of the Army, of the Navy, or of the Public Health Service, nor the Provost Marshal-General, may officially recognize any civilian organization in the mobilization of the medical profession for military service, your committee respectfully recommends that the American Medical Association continue as heretofore to render whatever aid it may to these Surgeon-Generals and to the Provost Marshal-General and that the Association continue the policy which it has constantly followed of aiding in every possible way with the individual members of the organization to determine and meet their obligations in these matters.

In this connection, the War Committee recalls the fact that the medical officers of the staffs of the Surgeon-Generals, the members of the Medical Corps of the United States Army, of the medical forces of the United States Navy, of the United States Public Health Service, of the medical division of the Provost Marshal-General's Office, and the medical section of the Advisory Commission of the Council of National Defense, are practically all members of the American Medical Association and that all commissioned medical officers of the United States Army, the United States Navy, and the United States Public Health Service, while on active duty, are also ipso facto Fellows of the American Medical Association.

Your War Committee calls attention to the fact that the Provost Marshal-General, through legally constituted provision, has assumed control of all men, including physicians, between the ages of 18 and 46 inclusive, for war service. The District Exemption Boards under the Selective Service Regulations, are empowered to place physicians of draft age in deferred classes for the protection of industries, communities, hospitals, medical schools, and public health service. These District Exemption Boards, and they alone, may for good and sufficient reasons exempt physicians of draft age from military service. In a word, all physicians under 46 years of age are under the direction of the Provost Marshal-General who, in turn, has empowered the Exemption Boards of the Selective Service System to induct physicians into military service or to detain them for civilian service as these boards deem best. At the same time, the Surgeon-Generals of the Army and Navy may commission physicians who volunteer in the Medical Corps of the Army or in the Medical Force of the Navy. Moreover, by mutual agreement with the Provost Marshal-General, these Surgeon-Generals may transfer physicians who have been inducted into the Army through the Selective Service Regulation from the line into the Medical Corps, and commission them.

Inasmuch as this is the first meeting of the Board of Trustees since June, 1918, our committee takes this opportunity to advise what position it believes the Association should take in regard to the Volunteer Medical Service Corps.

It is not a military organization, therefore its members cannot be placed under military discipline, nor can any member of the organization be forced to serve in the Army, Navy, Public Health Service or in the Office of the Provost Marshal-General. In consequence, it is not quite clear how it is to accomplish its announced object or purpose. Had the draft age not been raised to 45, or had the inactive list of the Medical Reserve Corps been continued, the organization would probably have been of assistance, provided it had been placed under military control, in solving the problem of securing a sufficient number of medical officers for the Army and Navy without seriously crippling the civilian practice.

With the increase of the draft age, a sufficient number of medical officers in the Army and Navy is now readily available, and the need of the civilian practice has become the function of the Selective Service Boards.

The Volunteer Medical Service Corps has received the approval of the President of the United States, which fact must receive due consideration. Your committee, therefore, recommends that we recognize the Volunteer Medical Service Corps as an organization in which physicians who are past military age, or whose services, because of physical or other conditions, are not available for the Army or Navy, may show their patriotism and willingness to give their services to which their qualifications entitle them.

It should be borne in mind that the government has constantly refused to draft the medical professional as a class, and has left physicians who are above the draft age, free to volunteer their services. This same freedom of action still remains to all physicians who are beyond draft age, 46 years. Membership in the Volunteer Medical Service Corps does not relieve the individual physician of his personal obligation to the country, nor does it affect his individual responsibilities to decide what his duty is regarding offering his service directly to the department of the government in which he desires to serve.

Hubert Work, Chairman,
A. R. Mitchell, Arthur D. Bevan,
Frank Billings, Geroge H. Simmons,
W. C. Phillips, Alexander R. Craig.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest; such as relate to society activities, new hospitals, education, public health, etc.)

CALIFORNIA

Baby Health Centers Opened.—The Children's Aid Committee of San Francisco announces that thirty baby health centers will be opened in the city as soon as possible after the subsidence of the epidemic of influenza.

Los Angeles Unit Leaves for France.—The Woman's Hospital Unit of Los Angeles, assigned for active work in France, left for New York. The unit is composed of ten women physicians, Drs. Etta G. Gray, Margaret M. Gilliland, Cecilia Reiche, Margaret Isaac Wilson, Maria C. Wells and Eva K. Greene, all of Los Angeles, and four other physicians, ten hospital aids, an ambulance driver and a chauffeur.

San Francisco Physicians Called Before State Board.—A number of physicians were ordered to appear before the State Board of Medical Examiners, October 22, to show why their licenses should not be revoked. Among these were Dr. William S. Card, San Francisco; Franklin P. Duncan and Charles L. Calhoun, charged with the performance of illegal operations; "Dr." Harry Ryberg, chiropodist, charged with advertising so as to give the impression that he is a physician; "Dr." C. L. Davis, an osteopath, charged with giving medicine, and Dr. David I. Hicks, charged with the performance of illegal operation and fictitious advertising.

League for Conserving Public Health.—At a conference held in Redding, recently, the Shasta County unit of the League for the Conservation of Public Health, was organized, and the following officers were elected: president, Dr. Ferdinand Stabel, Redding; vice presidents, Drs. George E. Flora, Anderson, and John P. Sandholdt, Kennett, and secretary-treasurer, Dr. Carl A. Mueller, Redding. League branches have been established and are in active operation in Santa Clara, San Mateo, Monterey, San Joaquin, Sacramento, San José, Sonoma, Stanislaus, Fresno, Alameda, San Francisco, Los Angeles, San Diego and Riverside counties.

Personal.—Dr. Ellis Harbert, Stockton, who has been seriously ill, is now believed to be out of danger.——Dr. Frank H. Pritchard, Colton, is reported to be seriously ill with influenza.—Dr. Casper L. Rinker, Madero, is said to be seriously ill with influenza.——Dr. Ray R. Dearborn, Madero, while making an emergency call sustained painful injuries by the overturning of his automobile.——Dr. George H. Galbraith, Long Beach, who has been ill with influenza, is convalescent.——Dr. Edward R. Kellogg, Los Angeles, has been reelected president of the Children's Home Society of California.——Dr. Edwin H. Crabtree, police surgeon of San Diego, has resigned to enter the United States service. ——Bail is said to have been ordered forfeited in the case of Dr. Alexander M. Lesem, San Diego, charged with violating the drug act regarding the prescribing of narcotics.——Dr. August Schmidt, Los Angeles, is said to have been held pending federal investigation on charges of having made statements to injure the sale of Liberty Loan Bonds.——Dr. Homer L. Wells, San Diego, charged with violation of the state drug act, was acquitted.

DELAWARE

Liquor Prescribing Stopped.—On complaint that Dr. Thomas O. Cooper, Wilmington, was issuing hundreds of prescriptions for liquor, Deputy Attorney-General Green and Chief of Police Blank are said to have visted his office, October 19, and warned him to cease his activities.

Personal.—Dr. Allen A. Perkins, city physician of Wilmington, has resigned to accept a position as physician to a shell plant at Port Penn.——Dr. Eli Nichols, Wilmington, who had been seriously ill with pneumonia, is reported to convalescent.——Dr. John L. Fisher is reported to be seriously ill with influenza.——Dr. Joseph B. Waples, Georgetown, has been elected physician to the Sussex County Almshouse, to succeed Dr. George E. James, who has entered the military service.

ILLINOIS

Illegal Practitioner Arrested.—Kathryn Forbrich Thumm was arrested by the Department of Registration and Education of the State of Illinois for practicing medicine without a license and was fined $25 and costs.

Rock Island Physician Liberated.—Dr. James D. Banta, Rock Island, who was arrested, tried and found guilty of violating the Harrison Narcotic Law, about six months ago, and was sentenced to five years imprisonment in the federal penitentiary, Leavenworth, Kan., was released, October 28, as it was found that he had been convicted and imprisoned under invalid acts.

Thanks for Medical Officers.—In view of the valuable assistance rendered by medical officers at Camp Grant, during the recent epidemic of influenza, Marlin H. Day, chairman of the Red Cross emergency influenza committee, Rockford, sent letters of thanks to Capts. F. D. Harrison, R. E. Jones and N. M. Johnson, M. C., U. S. Army, who were assigned to duty at the three emergency hospitals opened in Rockford in October.

Health Investigation of Working People.—The Illinois Health Insurance Commission appointed to investigate illness in working people not covered by the Workman's Compensation Act, and to make recommendations to the legislature looking toward the solution of the problems related thereto held a series of public meetings in the following cities: Chicago, November 7 to 9; Moline, November 11; Peoria, November 12; East St. Louis, November 13; Springfield, November 14; Champaign, November 15, and Danville, November 16. Labor organizations, employers of labor, representatives from the medical profession, health department officials, representatives of insurance companies and fraternal orders, social workers and others interested participated in these conferences.

IOWA

Hospital Corner Stone Laid.—The corner stone of St. Luke's Hospital, Davenport, was laid, October 2, with impressive ceremonies. The services were in charge of Bishop Morrison, Iowa City, and Rev. LeRoy M. Kauffman, Davenport, delivered the principal address. The hospital will cost about $200,000 and will contain 100 rooms for patients.

Personal.—Dr. Jay M. Crowly, Rock Rapids, is seriously ill with pneumonia following influenza.——Dr. Dennis F. Fitzpatrick, Iowa City, has been appointed local surgeon for the Rock Island System, to succeed Dr. John G. Mueller, deceased.——Dr. Edgar L. Bay and Richard F. Shahan, Eddyville, are reported to be seriouly ill with pneumonia. ——Dr. Ewen M. McEwen, Iowa City, is ill with diphtheria in the isolation hospital.——Dr. Chauncey P. Smith, Mason City, has been made chairman of the medical advisory committee for the local exemption boards, to succeed Dr. Channing E. Dakin, who has resigned to enter the military service.——Dr. Max E. Witte, Clarinda, has been reappointed superintendent of the Clarinda State Hospital.

LOUISIANA

Dowling Made Professor.—Dr. Oscar Dowling, Shreveport, president of the state board of health, has been elected adjunct professor to take charge of the course of hygiene in the School of Medicine of Tulane University, and to arrange the course of instruction for the students at Camp Martin.

New Health Board Appointments.—Governor Pleasant, October 29, announced the following appointments: as member and president of the state board of health, Dr. Oscar Dowling, Shreveport, and as members of the state board of health, Dr. Theophilus T. Tarlton, Grand Coteau, and Dr. Thomas A. Roy, Mansura, all reappointed.

MARYLAND

Health Conditions Almost Normal.—According to a statement made by Dr. John D. Blake of the health department, Baltimore came out with fewer fatalities and with less inconvenience in the recent influenza epidemic than did most of the large cities. The disease has disappeared almost entirely, there being only eight cases reported in the last twenty-four hours. A total of thirty-five persons died from all causes. This is the normal death rate in Baltimore. There were 4,664 deaths in the city from all causes during October, compared with 847 for the same month last year. The death rate per thousand of the whole population was 91.52. Lobar pneumonia, following influenza, killed 1,685, and bronchopneumonia 385. Other diseases were fatal in the following number of cases: tuberculosis, 167; heart disease, 200; diseases of babies of less than 2 years of age, 152; typhoid fever, 19; scarlet fever, 2; whooping cough, 23; diphtheria, 12; erysipelas 1; tetanus, 1; cancer, 47; epidemic meningitis, 5; apoplexy, 62; bronchitis, 26; Bright's disease, 105. The health department also reported thirty-one fatal accidents, fourteen suicides and eleven murders.

MICHIGAN

Personal.—Dr. Edward A. Runyan, health officer of Harbor Springs, has resigned, and has been succeeded by Dr. Levi W. Gardner.——Dr. Joshua G. R. Manwaring, Flint, who has been critically ill at Fort Oglethorpe with pneumonia, is reported to be improving.——Dr. Garner M. Byington, Charlotte, has been appointed a member of the state board of health and placed in charge of the newly created department of communicable diseases.——Dr. Henry M. Warren, Jonesville, has retired after more than fifty years of practice.

MINNESOTA

Postponement of Meeting.—Owing to the epidemic of influenza and the great number of physicians at present in military service, the executive council of the Southern Minnesota Medical Society announces that the society will not be convened in annual session on November 25 and 26.

Personal.—Dr. Patrick G. McGill, health commissioner of Superior, Wis., who has been working unremittingly since the first relief train from the fire-devastated region of Northern Minnesota arrived in Superior, and also in the influenza epidemic, is under treatment in a local hospital. Dr. Charles H. Mason has been appointed health commissioner during the illness of Dr. McGill.——Dr. Hibbert W. Hill, secretary of the St. Paul Public Health Association, has been appointed by the northern division of the American Red Cross to take charge of all relief work for fire and influenza patients.——Dr. Arthur E. Nichols, St. Paul, has been appointed director of school hygiene.——Dr. Herman W. Foehlich, Thief River Falls, has been appointed epidemiologist for Pennington and the surrounding counties.——Dr. Adolph E. Voges, White Bear Lake, has been elected physician of Ramsey County, to succeed Dr. Ernest W. Cowern, North St. Paul, who has entered the military service.

NEBRASKA

Hospital Corner Stone Laid.—The corner stone of the New Lutheran Hospital, Falls City, was laid recently. The building is to cost between $80,000 and $90,000.

Personal.—Dr. J. P. Connolly, Omaha, is making plans to proceed to Shanghai this month to take the position of clerk of the United State District Court of China.——Dr. Charles W. M. Poynter, Omaha, acting chief of the Nebraska University, has been appointed State Red Cross representative to act in conjunction with the state board of health during the influenza epidemic.——Dr. Irvin C. Munger, Lincoln, has been appointed physician to the State Penitentiary, to succeed Dr. George E. Williams, Havelock, who has entered the military service.

NEW MEXICO

Personal.—Dr. Eugene M. Fisher, Roswell, who has been seriously ill with influenza is improved.——Dr. Perry M. Baker, Artesia, has established headquarters at the Carrizozo at the Dr. Lucas Hospital.——Dr. James M. Doughty has purchased the interests of his partner in the Tucumcari Hospital.

State Society Meeting Postponed.—The secretary of the New Mexico Medical Society announced that the annual meeting of the society has been indefinitely postponed after a careful investigation of the situation and after consultation with the Bernalillo County Medical Society which was to have been the host on that occasion. The large number of the members of the society in service and the few who could attend the meeting determined this action of the council.

NEW YORK

Staff of Bureau of Venereal Diseases.—Permanent appointments to the staff of the Bureau of Venereal Diseases of the New York State Department of Health have recently been made as follows: Drs. Joseph S. Lawrence, Albany, chief; Edward H. Marsh, Brooklyn, consultant; Walter S. Goodale, Buffalo, hospital and dispensary inspector and organizer; Frederick S. Honsinger, Syracuse, lecturer on social diseases, and Maud Casey, supervising nurse and social worker.

Influenza.—The total number of influenza cases in New York state from October 2, when the first signs of an epidemic became manifest, to November 1 was approximately 114,486. Since the epidemic started the state has had supervision over 126 nurses and thirty-eight physicians engaged in fighting the disease throughout the state. The services of ninety-four of the nurses and four of the physicians were obtained under the special appropriation of $50,000 made available by Governor Whitman for emergency medical and nursing service. One hundred and four communities in the state have been furnished nursing assistance. Of this number only fifty-five are today considered as under actual epidemic conditions. Thirty-four have been freed to the extent that they are now able to cope with the situation without further state aid.

New York City

License Revoked.—At its July meeting it is reported that the North Carolina State Board of Medical Examiners revoked the license of Dr. J. W. Summers, Charlotte, on the grounds of his having been sentenced to a term in prison for manslaughter in malpractice in performing an illegal operation.

Harvey Society Lecture.—The second lecture of the Harvey Society series will be delivered by Dr. Alonzo E. Taylor, Philadelphia, of the United States Food Administration of the War Trade Board, on "The World Food Situation," at the New York Academy of Medicine, November 20, at 8:30 p. m.

Hospital Notes.—An Emergency Hospital was established in Asheville for the care of influenza patients at the high school, October 19. There were 150 new cases of the disease, October 18. The staff of the institution is composed of Drs. Carl V. Reynolds, S. Westray Battle, Arthur W. Calloway, Lewis W. Elias, William C. Brownson, Charles H. Cocke, Arthur L. Denchfield, and Philip R. Terry.

More Buildings Taken for Government Hospitals.—In accordance with the plan of the Hospital Division of the Medical Corps of the U. S. Army which calls for the securing of at least 5,000 new beds each month, in addition to taking North Brother Island, the government has taken the nine buildings which are in Exposition Park, Rochester, N. Y., and the Westchester Almshouse, which after alterations will accommodate 2,000 patients. The alterations necessary to equip these newly acquired buildings for hospital purposes will cost approximately $175,000, and will be effected by Jan. 1, 1919.

After-Care of Influenza and Pneumonia Patients.—The health department began to make physical examinations to detect any ill after-effects among influenza patients at the different relief stations where physicians of the department are on duty, November 11. As an emergency measure food will be provided for the very needy. The health department in its effort to provide homes for children bereft of their parents during the epidemic, declares that from a cursory examination of death certificates 2,000 young children have been left orphans. The health department is particularly desirous of placing these children in good homes.

Polyclinic Hospital Offered to Columbia University.—At the meeting of the trustees of Columbia University, November 4, it was announced that the New York Polyclinic Hospital, by unanimous vote, had offered to transfer the property of that institution to Columbia University, with the provision that it be maintained and perpetuated for the public service and for advanced research in medicine and surgery. In response to this offer the trustees of Columbia University adopted resolutions, receiving with grateful appreciation the proposal by the trustees of the Polyclinic Hospital, and appointing a subcommittee to arrange the detailed terms and conditions of accepting the proposed gift. The university will not be able to use the hospital for some time to come as it is now in possession of the government and is conducted as a military hospital.

OHIO

Personal.—Dr. Herbert M. Platter, Columbus, has been elected secretary-treasurer of the Ohio State Medical Association, to fill the unexpired term of Dr. Clarence D. Selby, Toledo, resigned.——Dr. Charles Lukens, Toledo, has been elected councilor of the fourth district, to succeed Dr. Edwin A. Murbach, Archbold, who has resigned to enter the military service.——Dr. Henry W. Cook, Hicksville, is seriously ill at his home as the result of a cerebral hemorrhage.——Dr. Guy H. Williams, for fifteen years assistant superintendent of the Columbus State Hospital, has been appointed superintendent of the Cleveland General Hospital, to succeed Dr. G. A. Hyde, who has been made superintendent of the Massillon State Hospital, to succed Dr. Henry C. Eyman, who has resigned.

Care of Discharged Soldiers.—The construction of institutions for the care of discharged soldiers is a legitimate war measure and the need in Ohio is great. The state department of health has been notified of 865 discharges of Ohio soldiers on account of tuberculosis. Despite careful follow-up work, it has been found impossible to place more than thirty-one of these men in hospitals, where they would be given the care which they should have and which would protect their families and associates against possible infection. The department estimates that 400 of these men would be glad to enter sanatoriums, if facilities permitted this, and that many more men rejected by draft boards would also undergo treatment. To meet both this and the regular prewar demand Ohio has 1,570 hospital beds available to the public, and last year these beds were 90 per cent. occupied at all times, making it necessary for applicants to remain on waiting lists for long periods before gaining admission to hospitals. Enlargement and extension of existing hospitals in the state and establishment of new district sanatoriums are being urged by the department.

OREGON

Voluntary Commitment Law Asked.—Dr. R. E. Lee Steiner, superintendent of the State Hospital for the Insane, Salem, in his biennial report, recommends that on account of the number of nonresident insane persons brought into the state a voluntary commitment law should be enacted, which would enable patients to obtain treatment without having to go to court or to jail.

Personal.—Dr. George F. Koehler, Portland, has been appointed surgeon in chief of the National Guard of Oregon, with the rank of major, to succeed Dr. William M. Campbell, who has resigned to enter the United States Service.——Dr. Luther E. McDougal, Eugene, who has been ill with influenza, is reported to be convalescent.——Dr. Thomas W. Ross, Portland, has been commissioned acting assistant surgeon of the United States Public Health Service, with station at Camp Sherman, Chillicothe, Ohio.——Dr. Walter H. Lott, Westport, is reported to be seriously ill.——Dr. Margaret E. Pomeroy, Salem, is reported to be seriously ill in Portland with pneumonia following influenza.——Dr. Bertram R. Shoemaker has been appointed physician to the State Soldiers' Home, Roseburg, to succeed Dr. Earle B. Stewart, who has resigned to enter the military service.——Dr. Alvane C. Seely, Roseburg, has been appointed assistant surgeon of the United States Public Health Service and acting state health officer, with headquarters at Portland.——Dr. James H. Robnett, has been elected health officer of the public schools of Albany.——Dr. Harvey J. Clements has been appointed surgeon to the S. A. T. C. at Willamette University, Salem.

PENNSYLVANIA

Will Establish Science Hall.—The will of the late Dr. John C. McClenathan, Connellsville, shows the value of the estate to be approximately $160,000, of which the bulk is given to his widow, and at her death to be diverted to the trustees of Washington and Jefferson Colleges to erect a building to be known as the McClenathan Hall of Science.

Philadelphia

The Alvarenga Prize.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about $250, will be made on July 14, 1919, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays intended for competition may be on any subject in medicine, but cannot have been published. They must be typewritten, and if written in a language other than English should be accompanied by an English translation, and must be received by the secretary of the college on or before May 1, 1919. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be returned on application within three months after the award. No Alvarenga Prize for 1918 was awarded.

CANADA

Hospital News.—Old St. Andrews College, Toronto, which was taken over by the federal government for hospital purposes, is now receiving patients.

Appointments.—Major Charles McMane, North Vancouver, B. C., becomes A.D.M.S. at Quebec in place of Major George A. Winters, Toronto, who has jointed the Siberian Force; Capt. Adam F. Menzies has been appointed cholera expert for the Siberian Force; Capt. Percy H. Desnoes, New York City, becomes chief surgeon at the Fredericton Military Hospital, New Brunswick.

Influenza Decreasing.—Dr. Charles J. C. O. Hasting, M. O. H., Toronto, says the epidemic of influenza there is rapidly declining. On the middle of the past week the total number of deaths from all causes registered thirty-eight, while during the height of the epidemic they totalled as many as 150. Statistics are now being prepared of the deaths in all the hospitals in Toronto, so that the toll of influenza and the pneumonias may be computed.

Personal.—Dr. John R. Irwin, Cobourg, Ont., who has been overseas for the past three years with the C. A. M. C., has returned to Cobourg. He was decorated for devotion to duty in going to the help of some entombed men at great personal danger.——Dr. John M. Rogers, Ingersoll, Ont., who two years ago was nominated to contest South Oxford in the Liberal interest for the Ontario Legislature, has resigned.——Major W. Harley Smith, Toronto, is now with the Fourteenth General Hospital, B. E. F., France, being in charge of wards for officers, and having both surgical and medical cases. This hospital is established in a big hotel and in huts on the coast.

FOREIGN

Honorary Memberships for Americans in Leading French Medical Society.—The Société Médicale des Hôpitaux de Paris elected at a recent meeting, as corresponding members *honoris causa,* Dr. Alexander Lambert, the president-elect of the American Medical Association, director of the medical service of the American Red Cross in France; Col. James T. Case, editor of the *American Journal of Radiology* and chief of the radiologic service of the American Army in France; Prof. William S. Thayer of Johns Hopkins, consultant to the American Expeditionary Force; Prof. Morton Prince of Tufts College, New York; Dr. Simon Flexner, director of the Rockefeller Institute for Medical Research, and Prof. Beverley Robinson of the University and Bellevue Hospital in New York, a former intern of the Paris hospitals. At the same time, five British physicians were also elected, including Sir Almroth Wright, Sir Bertrand Dawson, Sir Thomas Barlow, Sir Dyce Duckworth and Sir William Leishman. The motion to elect these eleven honorary members was presented by Netter, the president of the society, Chauffard, Béclère and Major Rist. The latter had not long returned from a visit to America.

New International Ear, Nose and Throat Journal.—During the last two years there has been published at Stockholm the *Nordiskt Tidskrift för Otiatri, Rhinologi och Larynologi.* The editorial staff consists of Professors Schmiegelow of Copenhagen, Uchermann of Christiana, Af Forselles of Helsingfors, and Bárány of Upsala, with Prof. G. Holmgren of Stockholm as the editor in chief. The articles were in the various Scandinavian languages but were followed by a résumé in one of the "congress languages." The *Nederlandsch Tijdschrift* now announces that it has been decided to transform it into an international journal, to be called the *Acta Oto-Laryngologica,* to publish articles in the writer's own language, including French, German and English. A number of other specialists in the five neutral countries have been added to the editorial staff, including Professors Burger of Amsterdam, Kan of Leyden, Benjamins and De Kleijn of Utrecht, and Schutter of Groingen. It is hoped to obtain a world-wide circulation for this new international journal. It is to appear at irregular intervals as material accumulates, each part to consist of 500 or 600 pages, and the subscription per part is to be 20 Swedish crowns, about $5. Address Prof. H. Burger, Keizersgracht 317, Amsterdam. Our Nederlands exchange adds that this new undertaking is not only of scientific moment, but is a step on the road to an actual League of Nations. It urges physicians in the Nederlands, interested in these specialties and their borderlands, to seize the opportunity to present a favorable impression of their country's scientific achievements.

Winkler's Jubilee.—Professor Winkler of Utrecht completes twenty-five years of professional work this year, and Professor Pekelharing sketches in a recent issue of the *Nederlandsch Tijdschrift* Winkler's contributions to science, especially his work on the brain. To his initiative was due the foundation of the Central Institute for Research on the Brain, established in connection with the Institute for Anatomy at Amsterdam by the Brain Commission. It has been in operation several years, in charge of Dr. A. Kappers. Winkler is a leading member of the Brain Commission, organized by the International Association of Academies. The publication of an atlas showing the finest details of the microscopic anatomy of the brain and spinal cord was planned by the commission, but the work has been interrupted by the war. Only two of the members of the commission have done their part of the work; these are Winkler and Monakow of Zurich. Winkler's research on the brain has brought to his laboratory such men as Monakow, Golgi, Van Gehuchten, Edinger and Sherrington, among others, to discuss his views and study his microscopic specimens. Winkler's "Manual of Neurology," published simultaneously in Dutch and French, testifies to his indefatigable efforts to benefit the sick by delving into anatomy and physiology. Winkler is now 63. Until 1914 he was connected with the University of Amsterdam, but then accepted a call to Utrecht, attracted by the new model psychiatric clinic. He has never founded a "school," as conditions in the Netherlands do not foster the gathering of a school of student workers around a professor, but he has always been popular as a teaching professor.

BUENOS AIRES LETTER

BUENOS AIRES, October 7, 1918.

Pan-American University Interchanges

The faculties of the medical department of the universities of Buenos Aires and Montevideo have recently concluded an agreement by which they are to interchange professors monthly from May to October. The interchange professors are to lecture on the special subjects in the branch of medicine which their chairs represent. In conformity to this agreement, the Buenos Aires professors, Drs. G. A. Alfaro and A. Gutierrez have been lecturing in Montevideo. From Montevideo has come to Buenos Aires Prof. A. Turenne.

The professor of clinical neurology at Rio de Janeiro, Dr A. Austregesilo, has been spending some time in this city, visiting all its medical institutions in detail.

Several Argentine professors have been invited to the Eighth Brazilian Medical Congress which is soon to be held at Rio de Janeiro, and several have already left for Rio, including Drs. G. A. Alfaro, J. Spangenberg, J. Guglielmetti and others.

The professor of physiology at Rio de Janeiro, Dr. A. Osorio de Almeyda, has been visiting in Buenos Aires, and has been conferring with research workers here.

Reforms in University Administration

The acting interim dean, Dr. Canton, having served out the term, the *consejo directivo* of the university held a meeting and nominated Dr. A. Gandolfo to the position of dean. Dr. Canton wished to retain the dean-ship, but the *consejo* did not heed his appeal.

The national government has finally approved of the plan for reform of the statutes of the universities. The plan contains a number of changes sanctioned by the university centers, but some of the innovations are open to serious discussion.

The members of the *consejo directivo* for the various faculties in the university are to be nominated in a special assembly. This will designate also the delegates to the superior *consejo universitario* whose term of office is to be two years. The dean is to be elected in the same manner, and he is to hold office for three years, and can be reelected after being out of office for one term. The members of the *consejo* are to serve for three years.

The change which is the greatest innovation and the most open to discussion is the constitution of this assembly. It is to comprise the titular professors, with an equal number of associate professors (*suplentes*) and an equal number of the students of the last three years.

The right is granted for associate professors, graduates and other persons with proper credentials to give open courses of lectures which the faculty will consider valid. Attendance at classes is not compulsory.

The retirement of professors reaching the age limit—*la jubilacion*—is also to be enforced for those who have reached this age.

The appointment is also provided for of *interventores* in the different departments of the universities for the purpose of presiding at the new elections. Prof. J. Arce has been appointed *interventor* in the Facultad de Medicina.

Delegates to Conference on Hygiene, Microbiology and Pathology

The national government has appointed as its representatives in this conference which is to convene at Rio de Janeiro, October 15, Drs. A. Bachmann, Cases Irigoyen, E. Pagniez, A. Vidal and S. Mazza. It has been a matter for general surprise that the better elements have thus been excluded from these appointments, those which had been making preparations for this gathering, especially the members of the Instituto Bacteriologico of the Deparatmento Nacional de Higiene, especially as it is this institution that gave the initiative for these South American conferences. The members of this institution have prepared thirty-two articles and several addresses.

Habitual Constipation

The Sociedad Medica Argentina has been holding a series of meetings devoted to discussion of this subject from both the medical and surgical standpoints.

New Professor of Clinical Medicine

Dr. M. R. Castex has been appointed to the chair of clinical medicine to succeed the late Prof. A. Ayerza.

Prevention of Serum Sickness by Beef Serum

The experience of Drs. Fernandez and Zubizarreta at the Children's Hospital has brought them to different conclusions from those recently announced by Dr. Penna at the Academia de Medicina. They observed twenty instances of serum sickness among sixty-seven patients injected, and hence they are unable to confirm that beef serum is able to ward off serum by-effects.

MEXICO LETTER

MEXICO CITY, October 30, 1918.

The Leading National Medical Organization

The Academia Nacional de Medicina on October 1 entered on its fifty-fifth year of work. The dean of the University of Mexico, Sr. N. Macias, presided at the meeting. The officers that have been elected for the year 1918-1919 are: president, Dr. R. Cicero; vice president, Dr. E. F. Montaño; first secretary, Dr. D. Lopez, and second secretary, Dr. M. R. Soberon. The treasurer and editor of the *Gaceta Medica de Mexico*, the official organ of the Association, is Dr. E. Landa. [The *Gaceta* is now in the eleventh volume of the third series, and recently the issues have been condensed into two large numbers during the year. It is indexed and reviewed regularly in the Current Foreign Literature Department of THE JOURNAL.]

Influenza in Mexico

Influenza has spread with extraordinary rapidity throughout the City of Mexico. The disease has already caused numerous deaths. In some cases it takes the form of an extremely acute bronchopneumonia lasting two or three days. In other cases there is merely the simple catarrhal form, but with temperature up to 106 and 107. Copious epistaxis is a common accompaniment. Congress appropriated the sum of $200,000 for the Departamento de Salubridad to defray the first expenses connected with the campaign against this universal epidemic disease.

Campaign Against Venereal Diseases

The Sociedad Mexicana Sanitaria y Moral de Profilaxis de las Enfermedades Venereas has just organized and opened a free advisory clinic for applicants with gonorrhea or syphilis. Certain members of the society and other persons in the capital contributed funds for installing this *consultorio*. It is open daily, with physicians belonging to the society in charge.

PARIS LETTER

Paris, Oct. 17, 1918.

The Influenza Epidemic

The prevailing epidemic of grip continues to be the subject for discussion in medical gatherings. The Société médicale des hôpitaux de Paris devoted its last meeting to the discussion. It seemed to be the general opinion that the present epidemic, to date, is less severe than that of 1889, the number of cases in this epidemic totaling only about one third the number of cases occurring during the similar period in 1889. Taking it as a whole, the present epidemic from the bacteriologic and clinical point of view, is similar to the 1889 epidemic. There is, however, one great difference, and that is the age of those affected. In the 1889 epidemic older persons were affected mostly, while in the present epidemic nearly all the victims are young persons. This statement was made by Dr. Louis Rénon and it is supported by the observations of his colleagues. Dr. Souques, physician of the hospices de la Salpêtrière and de Bicêtre, stated that he had not seen a single case of grip among the inmates of these institutions, numbering more than 3,000 aged persons, while among the personnel of the hospitals, all young persons, dozens of cases occurred. It can be said that in the present epidemic only persons between 15 and 40 years of age are affected.

It was the unanimous opinion that malignant grip is grave by reason of the pulmonary and pleural complications. It is mainly the pneumococcus that is concerned in the pathogenesis of these lesions; the streptococcus is encountered less often. Serotherapy seems to be indicated in treatment. Drs. Rénon and Mignot have obtained excellent results from its use. Seven patients who developed pulmonary complications in the course of grip were treated by antipneumococcus serum; all recovered. Dr. Netter used the serum in twenty cases and obtained most satisfactory results. Drs. Josué, Florand and Sergent emphasized the importance of phenomena from suprarenal insufficiency in the course of grip, and advised the use of epinephrin in such cases.

The Conseil d'hygiène du département de la Seine likewise devoted its last session to the discussion of influenza. The permanent committee on epidemics was charged to draft suggestions which would prove useful to the people in aiding to avoid the disease.

Bacteriology of Influenza

At the last meeting of the Académie des Sciences, Dr. Roux, director of the Institut Pasteur, reported the results of experimental research on the pathogenesis of grip. This work was done on monkeys at first, then on the human, by Drs. Nicolle and Lebailly of the Institut Pasteur of Tunis. Their observations showed that the infection is carried during the active stage of the disease by the nasal and bronchial mucus of grip patients. The monkey can be inoculated with the virus applied to the nasal mucous membrane or injected under the conjunctiva. The symptoms of grip are manifested in about six days. A man developed the same symptoms in about the same time when inoculated subcutaneously with bronchial mucus diluted ten times with physiologic saline solution. The infecting agent seems to be a very small micro-organism which passes through the Chamberland filter and which is distinct from all other microbes hitherto described, and notably from the bacillus of Pfeiffer. The subcutaneous injection of this organism into humans reproduces the disease. Intravenous injection, however, does not convey the disease to man or monkey.

Unrecognized Septicemias

Drs. Gauléjac and Nathan called attention at one of the recent meetings of the Académie de médecine to a class of latent apyretic septicemias, monosymptomatic, of which the most perfect type is that following the crushing of spongy bone. As a rule these cases are apyretic, not painful, and no matter how severe or extensive the contusion of the bone may be, they go unrecognized unless a most careful and thorough search is made. Pain, discomfort and loss of function appear about the tenth day, when the lesion of the spongy diaphyseal bone extends to the compact bone and to the joint. During this stage of the affection only one sign or symptom makes its appearance—a relative tachycardia. With an even temperature of 37.5 C., the pulse rate is 90, 100, 110. No other sign or symptom is present. It is always a case of septicemia, because in almost every instance blood culture reveals the enterococcus, more rarely the pneumobacillus of Friedlaender and they most certainly come from the bone focus because cultures made from excised bone nearly always yield one or the other of these organisms. The septicemia arises only in the bone, and when the contused bone is completely excised, the local lesion is repaired rapidly, and further septicemia does not occur, or is insignificant in degree. If the excision is incomplete, chronic osteo-arthritis develops, with a tendency to ankylosis, and a prolonged state of septicemia. The patient becomes pale, loses appetite and weight, becomes cachectic, and sometimes, months after the traumatism, a positive blood culture is obtained. These sequelae occur often.

This latent and monosymptomatic septicemia is essentially characteristic of lesions limited to the spongy bone, but when the soft parts are involved, there occur as a rule a febrile reaction and pain which overshadow the symptom from the bone lesion. All sorts of febrile septicemias with enormous oscillations may be observed, and even in the purely bone cases one may find associated with the enterococcus and the pneumobacillus the proteus, mesentericus, tetragenus, pyocyaneus, staphylococcus, and even gas bacilli.

The diagnostic value of the symptomatology of this form of septicemia is thus emphasized, and the pulse and blood culture permit control of any surgical intervention that may be undertaken and its being made thorough in time.

MADRID LETTER

Madrid, Oct. 1, 1918.

Persecution of Loyal Physician

Dr. Gomez Casas, physician of the Almeira prison, reported to his superiors the presence of influenza among the inmates of the prison early in the first epidemic. The governor of Almeira was not pleased at having his province invaded by the disease, and he summoned Dr. Casas and ordered him to sign a written report to the effect that he had been mistaken in his diagnosis, and retract his statements as to the existence of influenza in the prison. Dr. Casas refused to do this and he was fined. The amount of the fine was not much, but it was important because it signified arbitrary officialdom and lack of appreciation of the conscience and moral courage of a man devoted to science. The medical corps in the province of Almeira on this occasion set an example of loyalty. The Colegio Medico publicly announced that it would stand by Dr. Casas and subscribe the amount to pay the fine which a governor ignorant of his duties had imposed on him. At the same time an official protest was filed with the central public health authorities, the Consejo de Sanidad.

Payment of Health Officers by the State

The case of Dr. Casas is a sample of the restrictions imposed by the local authorities on the activity of physicians, but unfortunately for the latter their sufferings in very many cases and their complaints have motives more prosaic and at the same time more vitally important for their own existence. The immense majority of the population of Spain scattered through rural districts and hamlets get their only medical care from the so-called *medicos titulares*, physicians paid by the local authorities. As many of these hamlets are small and poor, the sums which they can afford to pay for the medical care of their poor neighbors (and nearly all are poor in these localities) is inadequate to support a physician. One single physician may have to visit two, three, four, up to eight or ten of these villages, many miles apart, and by ways accessible only on horseback as there are no practicable roads, in mountain zones where fogs and snow are almost constant. Sometimes on account of the actual poverty of the villages and hamlets, and at other times on account of political organizations to which the physician does not belong or is opposed, the local authorities exhaust the money at their command without paying the physician's salary, and years may pass without his receiving his money, as he is put off with promises which are fulfilled tardily, inadequately or never, as the case may be.

Similar conditions used to prevail in respect to schoolteachers, until one minister of public instruction, intelligent and impressed by the realities of the life of the nation, the Count de Romanones, ordered that the teachers in public schools should be paid by the government. Since then other ministers of public instruction have carried out further reforms in this line so that today the schoolteachers have a brilliant present and a splendid future before them. A group of physicians who have attained enviable renown and positions as statesmen have organized a movement for the payment of the *medicos titulares* by the government in the same way as the schoolteachers. This leading group of physicians in the senate is headed by Dr. Cortezo, a former minister of public instruction and member of the cabinet, the Consejo de Estado, Dr. Pulido, vice president of the senate, Dr. Gimeno, formerly minister of the navy and Dr. F. Rodriguez, also at one time minister of public instruction. Paid by the state, the *medicos titulares* would then be independent of petty local politics, and they could act with greater force and directness in matters affecting the public health, in which now they have little if any influence, directly to the detriment of all interested, local politicians being usually ignorant of the principles of sanitary science.

The great difficulty which the *medicos titulares* encounter in their aspirations is the general agitation for rebellion against too much centralization of power. Politics recently, after a period of centripetal tendency, during which all attributes and all authority were diverted to the central head, has lately become centrifugal, seeking to spread authority around among the provinces and the municipalities. As far as public health matters have been concerned and the support of those entrusted with carrying out provisions for the public health, only the centrifugal principle has prevailed, and this has demonstrated its inefficacy. In spite of the modern tendencies for decentralization and distribution of authority, in matters of public health there can be no question that a unified and graduated system with payment of the officials by the state is the only efficient principle.

LONDON LETTER

London, Oct. 15, 1918.

German Savagery to Prisoners

The report of Mr. Justice Younger's committee on the treatment by the Germans of prisoners of war taken during the spring offensives of 1918 has been issued. As in all previous reports, the tale is one of monotonous barbarity enlightened at only rare intervals by the conduct of a German officer who can be described as human. The statements were collected of upward of seventy British prisoners who succeeded in escaping. Each man took his life in his hand; but as one of them, Corporal A. J. Coney, said, "All the men in our compound felt that they might as well risk being killed getting back to British lines as remain in German lines to be killed by our shells or starved by Germans." The treatment of the prisoners is indicated by the statement of a German officer, March 22, at Marchiennes: "We will break your brave English hearts tomorrow." After capture the men were in nearly every instance left without food for periods varying from twenty-four to forty-eight hours, during which they were kept constantly on the march. Wounded prisoners got no dressing or attention and were forced to march with the others. Even the French peasants who tried to give the prisoners food were prevented, and when they reached water the men were not allowed to fall out to drink it. There was an utter disregard by the German command for its obligations whether entered into before or during the war. Prisoners were employed under pain of death on operations directly concerned with the German offensive. They were billeted in buildings, such as churches, without a roof, and with nothing to lie on or only verminous straw. The following is a typical day: Reveille at 3 a. m., a drink of coffee but no food. Marched to work, which would start about 8 a. m. Rest from 12 to 1; then work to 5 p. m. Nothing to eat until 7 p. m., when soup made of a kind of fried fish and lentils and a loaf to three men were given. The prisoners, of course, became very weak and exhausted. During the spell between 12 and 1 they collected nettles, which they brought to the camp at night to eat. The result was that most of them became ill with bad feet and dysentery, but they were still made to work. The camp was in a very insanitary condition, and there were no beds or blankets or straw. The prisoners of the Army Medical Corps volunteered to take over the sanitary arrangements of the camp, but this was refused. Of the hospital at Valenciennes an escaped prisoner gives a gruesome account. The food was bad, the sanitary arrangements appalling. Eggs were sometimes issued to the men who had lost limbs, but the German orderlies stole them and in some cases even the clothing of the prisoners, who had to lie in bed with nothing on except the bed covering made of papier mâché. One man, Private Ellis, lay in bed with a bullet wound in his lung for some days unattended. As he was in great pain he was crying, and was taken to a German doctor, who hit him a punch on the jaw. He came back crying and died next morning.

Boycott of German Scientists

The interallied conference on the future of international organization in science has met in London and unanimously adopted a statement which is intended to serve as a preamble to a number of resolutions, dealing with the withdrawal of the Allied nations from existing international associations and the formation of new ones to take their place. The confirmation of the academies represented at the conference is required before the text of the resolutions can be made public: "When more than four years ago the outbreak of war divided Europe into hostile camps, men of science were still able to hope that the conclusion of peace would join at once the broken threads, and that the present enemies might then once more be able to meet in friendly conference, uniting their efforts to advance the interests of science, for ever since the revival of learning in the middle ages, the prosecution of knowledge has formed a bond strong enough to resist the strain of national antagonism. And this bond was strengthened during the latter part of last century, when branches of science developed requiring for their study the cooperation of all the civilized nations of the world. International associations and conferences rapidly multiplied, and the friendly intercourse between the learned representatives of different countries grew more intimate, in spite of their political differences. In former times, war frequently interrupted the cooperation of individuals without destroying the mutual esteem based on the recognition of intellectual achievements; peace then soon effaced the scars of a strife that was ended. If today the representatives of the scientific academies of the Allied nations are forced to declare that they will not be able to resume personal relations in scientific matters with their enemies until the Central Powers can be readmitted into the concert of civilized nations, they do so with a full sense of responsibility; and they feel bound to record the reasons which have led them to this decision. Civilization has imposed restrictions on the conduct of nations which are intended to serve the interests of humanity and to maintain a high standard of honor. Such are the recognition of the sanctity of treaties — especially those designed to apply to a state of war—and the avoidance of unnecessary cruelties inflicted on civilians. In both these respects the Central Powers have broken the ordinances of civilization, disregarding all conventions and unbridling the worst passions which the ferocity of war engenders. War is necessarily full of cruelties; individual acts of barbarity cannot be avoided and have to be borne. It is not of these we speak, but of the organized horrors encouraged and initiated from above with the sole object of terrorizing unoffending communities. The wanton destruction of property, the murders and outrages on land and sea, the sinking of hospital ships, the insults and tortures inflicted on prisoners of war, have left a stain on the history of the guilty nations which cannot be removed by mere compensation of the material damage inflicted. In order to restore the confidence, without which no scientific intercourse can be fruitful, the Central Powers must renounce the political methods which have led to the atrocities that have shocked the civilized world."

The Influenza Epidemic

The influenza epidemic, which apparently had passed off, has undergone recrudescence in as widespread a form as before. The public health committee of the London County Council reports that the influenza epidemic between June 15 and August 3 caused from 1,600 to 1,700 deaths in London. The clinical features leave no doubt that the disease was identical with the epidemic influenza of 1890, but the difference in age incidence is noteworthy. In 1918, as compared with earlier epidemics, the incidence is higher between ages 5 and 45, and lower at ages over 45. Concurrently with influenza mortality, there was a large increase in deaths from bronchitis and pneumonia; and as this increase cannot be accounted for by any abnormal climatic conditions by which these diseases are governed, it is reasonable to assume that the major part of the added deaths from these causes are of influenzal origin. The epidemic was first reported in Spain. Generally speaking, it moved northward in Europe and eastward in India, and this movement would be consistent with a hypothesis of spread from the Mediterranean. In previous similar epidemics the progression has been westward in Europe, the country of origin usually being Russia. The war, however, has fundamentally changed the general character of European traffic—that from east to west being suspended, while the north and south traffic has been greatly augmented. The abnormal progression of the present epidemic may have been mainly determined by the changed lines of intercommunication.

Deaths

James Edward Moore ⊕ Minneapolis; one of the most notable surgeons of the Northwest; died at his home in Minneapolis, November 2, from pernicious anemia. He was born in Clarksville, Pa., March 2, 1852, pursued his medical studies at Bellevue Hospital Medical College, New York City, from which he was graduated in 1873. After three years of practice in Fort Wayne, Ind., six years in Emlenton, Pa., and three years of postgraduate study abroad, he located in Minneapolis in 1882. He specialized in surgery since 1888. He had been surgeon in chief of the Northwestern Hospital, Minneapolis, since 1907; and connected with the University of Minnesota since its organization in 1888; had been professor of surgery in its medical department since 1904, and chief of that department since 1908. He was made chairman of the Section on Surgery, General and Abdominal, of the American Medical Association in 1902, and had been a member of the Judicial Council of the Association since 1911. He was president of the Western Surgical Association in 1902, and was an honorary member of the American Orthopedic Association. He was an extensive contributor to the literature of his specialty, and was the author of Moore's Orthopedic Surgery, which was published in 1898.

James Edward Moore, M.D., 1852-1918

James Jackson Putnam ⊕ Boston; Harvard Medical School, 1870; aged 72; distinguished as a neurologist; lecturer on diseases of the nervous system in his alma mater from 1872 to 1875; clinical instructor from 1875 to 1885; instructor from 1885 to 1893; professor from 1893 to 1912, and professor emeritus from 1912; neurologist to the Massachusetts General Hospital from 1874 to 1909, and since that time consulting physician to the same institution; consulting neurologist to many public and private hospitals; author of several works, principal among which was the Memoirs of Dr. James Jackson; died at his home, November 4, from heart disease.

Lieut. John Gabriel Long, M. C., U. S. Army ⊕ Lancaster, Pa.; Johns Hopkins University, Baltimore, 1916; aged 27; resident surgeon at St. Agnes' Hospital, Baltimore, until June, 1918, when he became assistant instructor in treatment of infected wounds at the War Demonstration Hospital of the Rockefeller Institute for Medical Research, New York City; died in St. Joseph's Hospital, Lancaster, October 24, from pneumonia following influenza.

Jesse Sidney Wyler ⊕ Cincinnati; Medical College of Ohio, Cincinnati, 1904; aged 39; a member of the Cincinnati Academy of Medicine and American Academy of Ophthalmology and Oto-Laryngology; assistant clinical professor of ophthalmology in the University of Cincinnati; attending ophthalmologist to the Jewish Cincinnati General Hospital; died at his home in Avondale, Cincinnati, October 23, from bronchial pneumonia following influenza.

James Gifford Lynds ⊕ Ann Arbor, Mich.; University of Michigan, Ann Arbor, 1888; aged 55; acting professor of gynecology and obstetrics in his alma mater from 1897 to 1898; and clinical professor of obstetrics and demonstrator of gynecology and obstetrics until 1901; director and chief surgeon of the Ann Arbor Sanitarium; died at his home, October 24, from pneumonia following influenza.

William W. Hipolite, DeVall Bluff, Ark.; University of Michigan, Ann Arbor, 1857; aged 84; and once president of the Prairie County Medical Society; a member of the Arkansas Medical Society; formerly surgeon of the Memphis and Little Rock Railroad; surgeon in the Confederate Service during the Civil War; died at his home, October 24.

Isaac Norris, Philadelphia; University of Pennsylvania, Philadelphia, 1855; aged 85; from 1856 to 1876 professor of chemistry in the Central High School; director of Franklin Institute; a member of the American Philosophical Society and of the Academy of Natural Sciences; one of the secretaries of the College of Physicians of Philadelphia; died in Florence, Italy, October 22.

Joseph Kaufman ⊕ New York City; Long Island College Hospital, Brooklyn, 1910; aged 30; a member of the American Urological Association; genito-urinary surgeon to the People's Hospital, and chief of the urological clinic of St. Mark's Hospital; secretary of the New York Physicians' Association; died at his home, October 28.

Joseph T. Cox, Penn Yan, N. Y.; Chicago Homeopathic Medical College, 1888; aged 52; at one time a member of the Medical Society of the State of New York; for several terms coroner of Yates County; and up to the time of his last illness health officer of Penn Yan; died at his home, October 25, from pneumonia following influenza.

William Francis Conway, Albany, N. Y.; Albany (N. Y.) Medical College, 1909; aged 31; a member of the Medical Society of the State of New York; attending ophthalmologist and otologist to the Infants Home, and surgeon to the Eye, Ear, Nose and Throat Clinic, Albany; died at his home, November 1, from influenza.

John Peter Heyen, Northport, N. Y.; New York University, New York City, 1883; aged 59; a member of the Medical Society of the State of New York; health officer of Northport, and Suffolk County, since 1900; surgeon to the Huntington Hospital; formerly a druggist; died at his home, October 30.

Marcel Joseph De Mahy, New Orleans; Tulane University, New Orleans, 1910; aged 32; a member of the Louisiana State Medical Association, and a specialist in neurology; a member of the staff of the Touro Infirmary; died in that institution, October 15, from pneumonia following influenza.

Lieut. Cole Fro Smith, M. C., U. S. Army ⊕ San Antonio, Texas; University of Texas, Galveston, 1910; aged 34; a specialist in diseases of the skin; on duty at the Embarkation Hospital, Camp Stewart, Newport News, Va.; died in that institution, October 16, from pneumonia following influenza.

Charles Sudranski ⊕ Greencastle, Ind.; Medical College of Indiana, Indianapolis, 1905; aged 38; died, October 27, from an incised wound of the throat, self-inflicted, it is believed, with suicidal intent, while despondent on account of the death of his wife from influenza.

Lieut. Alexander Renold Lundgren, M. C., U. S. Army ⊕ Spokane, Wash.; John A. Creighton Medical College, Omaha, 1907; aged 34; surgeon for the Spokane International Railway, and awaiting his call to service; died at his home, October 24, from pneumonia following influenza.

Walter L. O'Hagan, Pittsburgh; University of Pittsburgh, 1907; aged 36; at one time a member of the Medical Society of the State of Pennsylvania; for some time a school physician of Pittsburgh; died in Mercy Hospital, Pittsburgh, October 31, from pneumonia following influenza.

John Charles Brown, Battle Creek, Mich.; Fort Wayne (Ind.) College of Medicine, 1886; aged 65; a member of the Michigan State Medical Society; once president of the Calhoun County Medical Society; died at his home, about October 28, from pneumonia following influenza.

Erastus E. Case, Hartford and Windsor Heights, Conn.; New York Homeopathic Medical College, New York City, 1874; aged 71; president of the Connecticut Homeopathic Medical Society in 1888; died at his home in Windsor Heights, October 27, from pneumonia.

Britton Emery Taylor, Brighton, Mo.; National University of Arts and Sciences, St. Louis, 1912; aged 30; a member of the Missouri State Medical Association; died in the Springfield Hospital, Springfield, Mo., October 22, from bronchial pneumonia following influenza.

Chesley Lightbourne Evans, Los Angeles, University of California, San Francisco, 1912; aged 30; a member of the Medical Society of the State of California; house physician of the Good Samaritan Hospital, Los Angeles; died in that institution, October 25, from pneumonia.

Thomas Justin Aller ⊕ Philadelphia, University of Pennsylvania, Philadelphia, 1910; aged 33; also a dentist; who had served with a medical unit in France, but returned to America in the spring of 1918; died at his home, October 29, from pneumonia.

Lieut. Gordon Greenleaf Williford, M. C., U. S. Army ⊕ Tifton, Ga.; Emory University, Atlanta, 1914; aged 33; on duty at Camp Joseph E. Johnston, Jacksonville, Fla.; died in the base hospital at that post, October 13, from pneumonia following influenza.

Walter F. Payne, Prairie Creek, Ind.; State College of Physicians and Surgeons, Indianapolis, 1907; aged 37; a member of the Indiana State Medical Association; died at his home, October 24, from pneumonia and meningitis, following influenza.

Roy Richard Longino, Fort Stockton, Texas; Tulane University, New Orleans, 1911; aged 30; a member of the State Medical Association of Texas; and a specialist on diseases of the eye, ear, nose and throat; died at his home, recently, from influenza.

John F. Dunwoody, Detroit; Detroit College of Medicine and Surgery, 1911; aged 34; a member of the Michigan State Medical Society; for two years a member of the staff of St. Mary's Hospital, Detroit; died at his home, October 20, from pneumonia.

Nicholas Shelby Veatch ⊕ California, Pa.; University of Pennsylvania, Philadelphia, 1873; aged 75; while going over a grade crossing at Phillipsburg, Pa., October 25, was struck by a train, receiving injuries from which he died, a short time later.

Asst. Surg. Lawrence Lyle McLendon, Lieut. (j. g.), U. S. N. R. F. ⊕ Opelika, Ala.; Emory University, Ga.; aged 25; intern in the Wesley Memorial Hospital, Atlanta; died in that institution, October 21, from pneumonia following influenza.

Lieut. Joseph Harold Boyes, M. C., U. S. Army ⊕ Hebron, Neb.; Ensworth Medical College, St. Joseph, Mo., 1893; aged 49; founder and owner of the Blue Valley Hospital, Hebron; died at his home, October 24, from pneumonia following influenza.

Charles Byron Tefft, Utica, N. Y.; Albany (N. Y.) Medical College, 1864; aged 80; a member of the Medical Society of the State of New York; twice coroner of Oneida County; died in a hospital in Utica, October 31, from cerebral hemorrhage.

Lieut. Robert Harrison Murdock, M. C., U. S. Army ⊕ Wilkes-Barre, Pa.; Hahnemann Medical College, Philadelphia, 1913; aged 28; assigned to duty with the Forty-Seventh Infantry overseas, was recently killed in action in France.

Walter Eugene Gregory ⊕ Dansville, N. Y.; University of Buffalo, N. Y., 1889; aged 61; a specialist in nervous diseases and a member of the staff of the Jackson Health Resort, Dansville; died at his home, October 26, from pneumonia.

Wallace Winn Bacon, Albany, Ga.; New York University, New York City, 1870; aged 69; a member of the Medical Association of Georgia; city physician of Albany, and physician of Dougherty County; died at his home, October 24.

Arthur Hardy Cutter ⊕ Lawrence and Methuen, Mass.; Harvard Medical School, 1901; aged 45; for several years chief of the surgical staff of the Lawrence General Hospital; died at his home in Methuen, October 4, from pneumonia.

William Cletus Cooney, Indiana Harbor, Ind.; Chicago College of Medicine and Surgery, 1917; aged 23; physician for the Inland Steel Company of Indiana Harbor; died in Mercy Hospital, Gary, Ind., October 11, from pneumonia.

Ralph Waldo Homan, Webster City, Iowa; State University of Iowa, College of Homeopathic Medicine, Iowa City, 1894; aged 49; formerly a member of the faculty of his alma mater; died at his home, October 31, from cerebral embolism.

Miles Underwood Lieser, Vancouver, Wash.; University of Oregon, Portland, 1908; aged 39; at one time a member of the Washington State Medical Association; died at his home, October 25, from pneumonia following influenza.

Rufus Alvin Egbert, Custer City, Pa.; University of Michigan, Ann Arbor, 1875; aged 69; a member of the Medical Society of the State of Pennsylvania; died at his home, November 5, from pneumonia following influenza.

William James Churchill, Longmont, Colo.; Medico-Chirurgical College of Philadelphia, 1905; aged 42; a member of the Colorado State Medical Society; died in the Longmont Hospital, October 25, from influenza.

William James Backus, Stockton, Calif.; Trinity Medical College, Toronto, Ont., 1904; aged 28; a member of the Medical Society of the State of California; died at his home, October 27, from pneumonia following influenza.

William Glenn Miller, Morrisville, Mo.; Barnes Medical College, St. Louis, 1909; aged 35; a member of the Missouri State Medical Association; died at his home, September 29, from bronchial pneumonia following influenza.

Thomas Garfield Dodds, Oakland, Calif.; University of California, San Francisco, 1907; aged 40; at one time a member of the Medical Society of the State of California; died at his home, October 27, from influenza.

Lieut. Claude Dean, M. C., U. S. Army ⊕ Bogalusa, La.; on duty at Fort Oglethorpe, Ga.; Tulane University, New Orleans, 1914; aged 33; died at Fort Oglethorpe, October 20, from pneumonia following influenza.

Hervey S. Keller, Frankfort, Ky.; Pulte Medical College, Cincinnati, 1892; aged 47; for five months connected with the Santa Fe Coast Line Hospital, Albuquerque, N. M.; died at his home in that city, October 28.

Michael John Shiel, Indianapolis; Indiana University, Indianapolis, 1914; aged 32; a member of the Indiana State Medical Association; died in St. Francis' Hospital, Indianapolis, October 20, from pneumonia.

Robert Grosvenor, Newport, R. I.; College of Physicians and Surgeons in the City of New York, 1918; aged 26; died in the Waldorf-Astoria Hotel, New York City, October 28, from pneumonia following influenza.

Myron E. Stephens ⊕ Gardiner, N. Y.; Albany (N. Y.) Medical College, 1888; aged 63; health officer of Gardiner, and county physician of Ulster County; died at his home, about October 29, from influenza.

Lieut. James Gordon DeVane, M. C., U. S. Army ⊕ Adel, Ga.; Atlanta (Ga.) School of Medicine, 1911; aged 32; a member of the Medical Association of Georgia; died at his home, October 21, from influenza.

Andrew Joseph Mackay, Salem, Mass.; College of Physicians and Surgeons, Baltimore, 1902; aged 39; at one time an official of the health department of Salem; died at his home, October 29, from acute gastritis.

James Gladney Evans, Farmerville, La.; Vanderbilt University, Nashville, Tenn., 1898; for eight years coroner of Union parish; died at his home, about October 23, from pneumonia following influenza.

Clark L. Myerly, Burr Oak, Kan.; University Medical College, Kansas City, Mo., 1913; aged 32; a member of the Kansas Medical Society; died at his home, October 21, from pneumonia following influenza.

Harry Andrews Mills, Jacksonville, Fla.; Medical College of Ohio, Cincinnati, 1904; aged 38; a member of the Florida Medical Association; died at his home, October 16, from pneumonia following influenza.

Perry Ped Laughlin, Steubenville, Ohio; Toledo (Ohio) Medical College, 1913; aged 34; a member of the Ohio State Medical Association; died at his home, October 24, from pneumonia following influenza.

Joseph H. Blatner, Albany, N. Y.; Albany (N. Y.) Medical College, 1872; a member of the Medical Society of the State of New York; died, October 27, from injuries received when run down by an automobile.

Charles Robert Blake, Dillon, Mont.; Rush Medical College, 1913; aged 33; a member of the Medical Association of Montana; died at his home, about October 30, from pneumonia following influenza.

Herbert Eddes Brown, Houston, Texas; Memphis (Tenn.) Hospital, Medical College, 1901; aged 43; at one time a member of the State Medical Association of Texas; died at his home, October 25.

Lieut. Dorsey Elbrooks Payne, M. C., U. S. Army ⊕ Cordele, Ga.; Meharry Medical College, Nashville, Tenn., 1917; aged 25; died at his home, October 8, from pneumonia following influenza.

Thomas Joseph Conners, West Haven, Conn.; University of Maryland, Baltimore, 1912; aged 28; died at the home of his parents at Shelton, Conn., October 24, from pneumonia following influenza.

Rufus K. Merriam, Fort Rock, Ore.; Starling Medical College, Columbus, Ohio, 1892; aged 49; died in St. Elizabeth's Hospital, Baker City, Ore., October 29, from pneumonia following influenza.

Lieut. Lewis Zion, M. C., U. S. Army ⊕ New York City; College of Physicians and Surgeons in the City of New York, 1915; aged 29; died at Fort Slocum, N. Y., October 31, from pneumonia.

Edward Bulger Chapman, Brockport, N. Y.; University of Michigan, Homeopathic Medical School, Ann Arbor, 1907; aged 36; died at his home, October 26, from pneumonia following influenza.

Lieut. Wayne Person Hanson, M. C., U. S. Army ⊕ Los Angeles; Jefferson Medical College, 1912; aged 30; died in Philadelphia, October 26, from bronchial pneumonia following influenza.

Lieut. Milton Sylvester Sell, M. R. C., U. S. Army ⊕ Pittsburgh; University of Pittsburgh, 1908; aged 40; died at the home of his brother in North Side, Pittsburgh, November 5.

William Waller Vest, Clarksville, Va.; Medical College of Virginia, Richmond, 1901; aged 44; a member of the Medical Society of Virginia; died at his home, October 25, from pneumonia.

Harleston Read Simons ⊕ Charleston, S. C.; Medical College of the State of South Carolina, Charleston, 1909; aged 32; died at his home, October 21, from pneumonia following influenza.

Samuel Donald Stout, Cleveland; University of Texas, Galveston, 1918; aged 23; an intern in the City Hospital, Cleveland; died in that institution, October 1, from pneumonia.

William Henry Monagan, Mount Alton, Pa.; University of Pittsburgh, 1912; aged 37; a member of the Medical Society of the State of Pennsylvania; died at his home, recently, from influenza.

John S. Wood, Hot Springs, Ark.; Tulane University, New Orleans, 1906; aged 35; health officer of Garland County; died at his home, October 27, from pneumonia following influenza.

Lewis F. Frey, Baltimore; Baltimore Medical College, 1888; aged 52; a member of the Medical and Chirurgical Faculty of Maryland; died at his home, November 1, from heart disease.

Solon Slade Barnette, Kilgore, Texas; Universities of Nashville and Tennessee, Nashville, 1910; aged 34; died at his home, October 21, from pneumonia following influenza.

George O. Quesenberry ⊕ Hinton, W. Va.; College of Physicians and Surgeons, Baltimore, 1887; aged 55; died at his home, October 20, from pneumonia following influenza.

Julian Ormal Walter ⊕ Bristol, Ind.; Indiana University, Bloomington and Indianapolis, 1912; aged 35; died at his home, October 28, from pneumonia following influenza.

Frank Townsend Stannard ⊕ Troy, N. Y.; Albany (N. Y.) Medical College, 1888; aged 52; a specialist in compensation insurance; died at his home, October 29, from influenza.

Hiram Pacco Whitford, Bridgewater, N. Y.; Eclectic Medical Institute, Cincinnati, 1860; aged 92; for many years a justice of the peace; died at his home, October 28.

William Elmer Kiser ⊕ Bellaire, Ohio; Cleveland-Pulte Medical College, Cleveland, 1911; aged 33; died at his home, October 25, from pneumonia following influenza.

Frederick Bellosa, New Haven, Conn.; Yale University, New Haven, 1872; aged 75; a member of the Connecticut State Medical Society; died at his home, October 20.

Donald Cuyler McKinnon, Lowell, Mass.; Tuft's College, Boston, 1918; aged 23; intern in the Lowell Corporation Hospital; died, September 28, from influenza.

George W. Betson, Jr., Quantico, Md.; Baltimore Medical College, 1905; aged 43; died at his home, about October 27, from pneumonia following influenza.

J. Edwin E. Olander ⊕ St. Paul; University of Minnesota, Minneapolis, 1904; aged 41; died at his home, October 25, from pneumonia following influenza.

Richard H. L. Garrett, Sellers, Ala.; Maryland Medical College, Baltimore, 1902; aged 38; died at his home, October 25, from pneumonia following influenza.

William Wilson Cassidy ⊕ Durand, Wis.; University of Illinois, Chicago, 1900; aged 42; died at his home, October 25, from pneumonia following influenza.

Abbott Lathrop Cooley ⊕ Chicopee Falls, Mass.; University of Michigan, Ann Arbor, 1897; aged 60; died at his home, October 28, from pneumonia.

John Smits ⊕ Leadville and Glenwood, Colo.; University of Paris, France, 1904; aged 49; died at his home in Glenwood, October 26, from pneumonia.

Lee Franklin McKay, Martin, Tenn.; Vanderbilt University, Nashville, Tenn., 1897; aged 44; dropped dead in Illinois Central Park, Martin, October 25.

Loyal Maximilian Martin ⊕ Newkirk, Okla.; Rush Medical College, 1913; aged 31; died at his home, October 19, from pneumonia following influenza.

Theodore John Trautmann ⊕ Hayti, Mo.; Marion-Sims Medical College, St. Louis, 1899; aged 43; died at his home, October 16, from pneumonia.

William J. Cook, Long Beach, Calif.; Baltimore Medical College, 1895; aged 48; died at his home, October 26, from pneumonia following influenza.

Ottmar von Schallern ⊕ Ripon, Wis.; University of Illinois, Chicago, 1891; aged 70; for thirty years a druggist of Ripon; died at his home, October 21.

George Washington Burk, Sisson, Calif.; Cooper Medical College, San Francisco, 1893; aged 46; died at Yreka, Calif., October 24, from pneumonia.

John Garnes Craig, Chicago; University of Michigan, Ann Arbor, 1891; aged 53; died at his home, November 6, from carcinoma of the tongue.

Richard A. Hasbrouck, Salt Lake City, Utah; Bennett Medical College, Chicago, 1882; aged 60; died at his home, October 24.

Albert Guy Alley ⊕ Minneapolis, Minn.; University of Minnesota, Minneapolis, 1905; aged 38; died in St. Paul, October 25.

Clinton Charles Moffat ⊕ Prosser, Wash.; University of Oregon, Portland, 1914; aged 35; died at his home, about October 29.

John Edward Wilson, Denver; Harvard Medical School, 1905; aged 39; died at his home, October 24, from influenza.

Arthur James Todd, New Boston, N. H.; Boston University, 1884; aged 52; died at his home, about October 15.

William Joffee ⊕ Chicago; Rush Medical College, 1904; aged 38; died at his home, October 21, from pneumonia.

Albert Roy Richey, Herreid, S. D.; State University of Iowa, Iowa City, 1905; died at his home, October 16.

William Mann Radcliff, Los Angeles; Jefferson Medical College, 1889; died at his home, October 22.

Marriages

Capt. Solon Mitchell Langworthy, M. C., U. S. Army, Cedar Rapids, Iowa, on duty with the American Expeditionary Forces in France, to Miss Madeleine Thomas of New York, in Paris, October 1.

Lieut. John Philip Strickler, M. C., U. S. Army, San Francisco, on duty at Camp McDowell, Angel Island, Calif., to Dr. Florence Edetha Dunlop, also of San Francisco, October 24.

Lieut. Francis X. McGovern, M. C., U. S. Army, on duty at Walter Reed General Hospital, Washington, D. C., to Miss Lottie Brown of Washington, D. C., October 30.

Asst. Surg. Frank Mullen Cannon, Lieutenant (Junior Grade), U. S. Navy, Great Lakes, Ill., to Miss Katherine McGovern of Vaile, La., at Great Lakes, October 30.

Lieut. Lester Charles Scully, M. C., U. S. Army, San José, Calif., on duty at Camp Logan, Texas, to Miss Gladys Neilson of Berkeley, Calif., at Camp Logan, recently.

Lieut. Leonard J. Murphy, M. C., U. S. Army, Fairland, Ill., on duty at Camp Grant, Rockford, Ill., to Miss Rosalie Dulaney of Slater, Mo., October 23.

Major Everett Logan Goar, M. C., U. S. Army, to Miss Italia West, both of Houston, Texas, October 27.

Hans Christian Holm, Washington, D. C., to Miss Alice May Butler of Boston, October 16.

James Carl Drake, Kerman, Calif., to Miss Rosalie Lord of Redwood, Calif., October 21.

Burr Burton Mosher to Miss Juliett Holmes Griffith, both of Brooklyn, October 26.

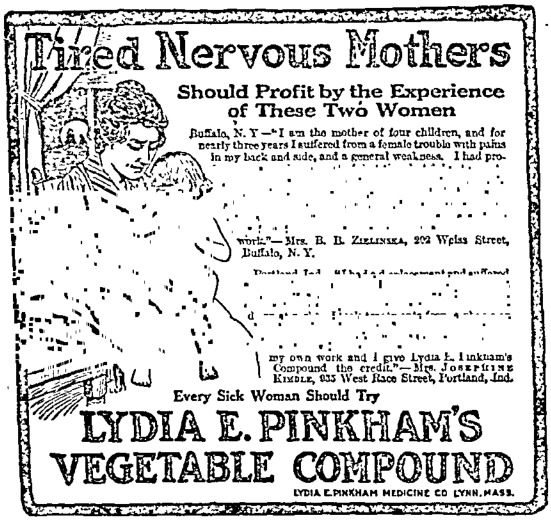
The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

MORE MISBRANDED NOSTRUMS

Jacobs' Liver Salt.—This preparation was sold by the Jacobs' Pharmacy Co. of Atlanta, Ga., and, according to government reports, consisted largely of sodium phosphate, sodium sulphate, and common salt, incorporated with a dried mixture of washing soda, and citric acid. It was falsely and fraudulently claimed to be a remedy for headache, rheumatism, gout, gastritis, and sore throat. It was further misbranded, in that it was claimed to contain lithium phosphate in appreciable quantities, when, as a matter of fact, there was little, if any, lithium phosphate present. The company was fined $25 and costs.—[*Notice of Judgment No. 4992.*]

Lydia Pinkham's Vegetable Compound.—This widely advertised, alcoholic nostrum, put out by the Lydia E. Pinkham Medicine Co. of Lynn, Mass., was reported by the government to contain 17.9 per cent. alcohol, and 0.56 grains of solids to each 100 c.c., with vegetable extractive material present. It was falsely and fraudulently claimed to be effective as a remedy for falling of the womb, leucorrhea, inflammation and ulceration of the womb, for curing diseases of women and for all female ailments and affections, diseases of the bladder, and effective as a cure for dysmenorrhea, uterine tumors, diseases of the ovaries, etc., and as a preventive of miscarriage, "when, in truth and in fact, it was not." The company was fined $50.—[*Notice of Judgment No. 4997.*]



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my own work and I give Lydia E. Pinkham's Compound the credit."—Mrs. JOSEPHINE KIMBLE, 935 West Race Street, Portland, Ind.

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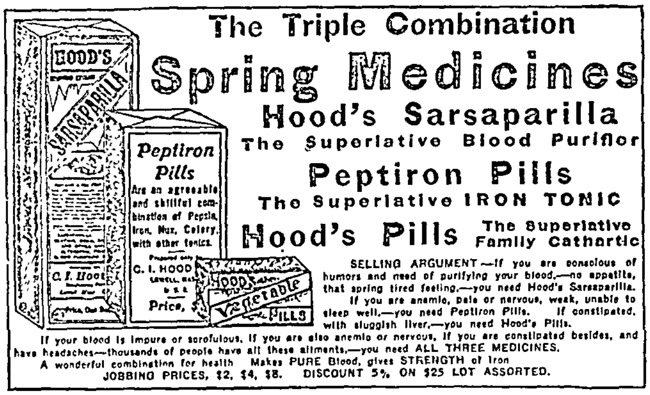
LYDIA E. PINKHAM'S VEGETABLE COMPOUND

LYDIA E. PINKHAM MEDICINE CO LYNN, MASS.

Maguire's Extract of Benne Plant and Catechu Compound.—The J. & C. Maguire Medicine Co. of St. Louis sold this product, which contained over 39 per cent. of alcohol and 1/10 grain of morphin to each fluidounce, besides camphor, catechu and peppermint. The government charged that the claims made that it was a reliable specific for diarrhea, dysentery and cholera morbus, and a preventive of Asiatic cholera, were false and fraudulent, and further that the statement that it was "perfectly harmless" was false and misleading, in that it indicated that the article was composed of harmless medicinal agents as its principal and most active ingredients, when as a matter of fact, its principal and most active ingredient was a dangerous, habit-forming drug, morphin. The company pleaded not guilty, but the jury decided otherwise. The company then filed a motion for a new trial and the case having come on for retrial, the concern was again found guilty, and was fined $200 and costs.—[*Notice of Judgment No. 4988.*]

Hood's Sarsaparilla.—The C. I. Hood Co. of Lowell, Mass., was charged with misbranding "Hood's Compound Extract of Sarsaparilla." The federal chemists reported that the product was a mixture of alcohol (16½ per cent.) and water, containing about 0.90 per cent. of potassium iodid, 5.5 per cent. of sugars, 6.5 per cent. of vegetable extractives, which bore indications of the presence of sarsaparilla, licorice and a laxative drug resembling senna. The preparation was sold under the claim that it was a remedy for "scrofula," eczema, "cancerous humors," "catarrh," rheumatism, "female weakness," consumption, dropsy, varicose veins, and various other conditions. These claims were declared false and fraudulent, and the company was fined $50.—[*Notice of Judgment No. 4990.*]



HOOD'S
SARSAPARILLA
C. I. Hood
Peptiron Pills
Are an agreeable and skillful combination of Pepsin, Iron, Nux, Celery, with other tonics.
C. I. HOOD
Price,
HOOD'S
Vegetable
PILLS

The Triple Combination

Spring Medicines

Hood's Sarsaparilla
The Superlative Blood Purifier

Peptiron Pills
The Superlative IRON TONIC

Hood's Pills The Superlative Family Cathartic

SELLING ARGUMENT.—If you are conscious of humors and need of purifying your blood,—no appetite, that spring tired feeling,—you need Hood's Sarsaparilla. If you are anemic, pale or nervous, weak, unable to sleep well,—you need Peptiron Pills. If constipated, with sluggish liver,—you need Hood's Pills.

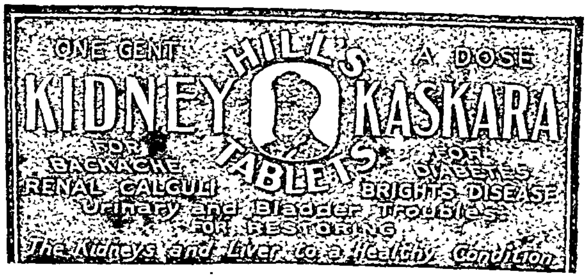
If your blood is impure or scrofulous, if you are also anemic or nervous, if you are constipated besides, and have headaches—thousands of people have all these ailments,—you need ALL THREE MEDICINES.

A wonderful combination for health Makes PURE Blood, gives STRENGTH of Iron

JOBBING PRICES, $2, $4, $8. DISCOUNT 5% ON $25 LOT ASSORTED.

Hyomei.—Booth's Hyomei Co. of Buffalo, N. Y., sold a preparation under the name of "Booth's Hyomei Dri-Ayr." Government chemists reported that the product consisted essentially of oil of eucalyptus, together with a small amount of resin-like solids and a mineral oil; also a little alcohol. It was sold under the false and fraudulent claim that it was a remedy for catarrh, asthma, bronchitis, hay-fever, and catarrhal deafness, "when in truth and in fact, it was not." The company was fined $10.—[*Notice of Judgment No. 4991.*]

Hill's Kidney Kaskara Tablets.—These tablets were put out by the W. H. Hill Co. of Detroit, Mich., and, according to government analysis, were an iron oxid, sugar-coated tablet carrying emodin, caffein, acid resin, magnesium carbonate and talcum. It was sold as a remedy for diabetes, Bright's disease, "consumption of the kidneys," renal calculi, etc., claims which were obviously false and fraudulent. The company filed a motion to quash the information, but the motion being denied, the company pleaded guilty and was fined $50.—[*Notice of Judgment No. 4993.*]



ONE CENT HILL'S A DOSE

KIDNEY KASKARA

TABLETS

FOR BACKACHE RENAL CALCULI

FOR DIABETES BRIGHT'S DISEASE

Urinary and Bladder Troubles

FOR RESTORING The Kidneys and Liver to a Healthy Condition

Hancock Sulphur Compound.—The Hancock Liquid Sulphur Co. of Baltimore was charged with misbranding its products, "Hancock Sulphur Compound," and "Hancock Sulphur Compound Ointment." Federal chemists reported that the former was a solution of calcium polysulphids and calcium thiosulphate, while the latter was an ointment containing petrolatum, with 0.91 per cent. of sulphur, 0.38 per cent.

ash (mainly lime), and carbolic acid (phenol). The liquid preparation was sold as a remedy for eczema, catarrh, sore throat, granulated eyelids, rheumatism, piles, blood diseases, etc., while the ointment was represented to be a remedy for eczema, skin diseases, all eruptions of the skin, scalp diseases, etc. The claims for both were declared false and fraudulent, and the company was fined $25 and costs.—[*Notice of Judgment No. 4994.*]

Palmer's Skin Whitener.—"Dr. Fred Palmer's Skin Whitener" was sold by the Jacobs' Pharmacy Co. of Atlanta, Ga. The Bureau of Chemistry reported that the product contained a poisonous and deleterious ingredient, namely, 7.85 per cent. mercury calculated as ammoniated mercury, mixed with a fatty base. It was sold under the claim that it was "absolutely harmless," which claim was false and misleading. It was also falsely and fraudulently claimed to be a remedy for all forms of eczema and skin eruptions. The company was fined $25 and costs.—[*Notice of Judgment No. 4995.*]

Grossman's Specific Mixture.—This preparation was sold by Wright's Indian Vegetable Pill Co. of New York City, and, according to federal chemists, was a mixture composed of two layers, the upper layer containing alcohol, water, opium and coloring matter, the lower, making up about 92 per cent. of the total mixture, being chiefly balsam copaiba and oils. The stuff was sold as a specific for the cure of gonorrhea, gleet, stricture, etc., and as a preventive of gonorrhea. These false and fraudulent claims brought about a fine of $100.—[*Notice of Judgment No. 4996.*]

Correspondence

"VACCINES IN INFLUENZA"

To the Editor:—The current comment in your issue of October 19 prompts me to call attention to the efforts of this laboratory and base hospital to do something specific for influenza. It was obvious from the first that the virus was an overwhelming one, and it was noteworthy that uncomplicated influenza was associated with leukopenia and that the complicating pneumonia raised the leukocytes very little, seemingly inadequately.

In casting about for a simple, efficient and safe means to raise the leukocytes, antiserum from recovered patients was used with some profit but without a great leukocyte reaction. We then prepared a serobacterin, using the serum of patients recovered from simple influenza and from influenza complicated by pneumonia. The bacteria used were two strains of influenza bacilli, one strain each of pneumococcus Type I and Type IV, one strain of hemolytic streptococci and one strain of nonhemolytic streptococci, all recovered from postmortems. This was administered subcutaneously, the leukocyte curve was watched, and it was found that there was a drop in leukocytes from six to twelve hours, followed by a rise at the end of eighteen hours, sometimes to 300 per cent. In no case was there any form of protein shock, and in only a few cases was there a slight local skin reaction. After the first few cases this bacterin has been given in doses of 100,000,000, 200,000,000 and 400,000,000, at intervals of twelve hours. In uncomplicated influenza, about forty cases, pneumonia has not occurred. Of nine pneumonia patients, two that were practically moribund have died and the rest have improved faster than patients similarly affected in the same ward. Some of this material has been supplied to Dr. J. H. Flexner of Louisville, who reports a very pronounced improvement and rapid fall of temperature after two doses. This gentleman also thinks that there has been pronounced improvement in cases of pneumonia.

We are still critical of this procedure and do not claim anything; but this letter is written because it would seem from the above mentioned "comment" that The Journal would be glad to have more information and because we should like to have others attempt this treatment in a critical spirit. It seems to be as simple and safe a means of producing hyperleukocytosis as can be imagined.

Herbert Fox, M. D.,
Major, M. C., U. S. Army. Camp Zachary Taylor, Louisville, Ky.

THE PHYSICIAN AND THE PROBLEMS OF RECONSTRUCTION

To the Editor:—I hope that no reader of The Journal failed to scrutinize the London Letter, Nov. 2, 1918, p. 1504.

As the close of the war draws near, the problems of reconstruction come more and more to arrest the attention of thoughtful citizens both at home and abroad. We have heard much in recent years of the physician in politics. Are we as a profession measuring up to the requirements of the situation or are we lagging behind our colleagues across the seas?

It is not ours to decide in full the future rôle of our profession. We need only to glance at Russia for the confirmation of this statement. In that troublous land of red revolution, the soviet government has definitely assigned the physician to a place with the bourgeoisie. In spite of his twenty-four hour day and his Sundayless week, the physician is to have no part in the dictatorship of the proletariat. In the purview of Lenine and Trotzky he is not a worker at all.

We scarcely anticipate anything like this in American politics, yet strange ferments are at work in our sociological brew. Just now, to read the *Congressional Record,* it would appear that we are menaced by the repudiation of the intelligensia. Certain members of Congress, during the recent discussion of a reserve for the Public Health Service, gave voice to a fear that medical men may achieve undue political influence. And one member—Mr. Sisson—saw fit to ignore the wise counsel of Burke, and to impeach the honor of a whole profession. It may be well, in these trying hours of war, when medical men are doing their best, to pause one moment to get the lawyer-politician's view:

> I will say that some years ago in my own state, when I was a member of the legislature, we had an appropriation for one of these funds for the purpose of taking care of the yellow fever epidemic if it should arise. Unfortunately, as long as that appropriation was in existence we had an annual yellow fever scare. As soon as that appropriation was withdrawn and no $50,000 or $75,000 was placed at the disposal of the health authorities, we had no more yellow fever epidemics except where they were real and genuine.
>
> That little experience has led me to believe that if you turn our good physicians—and we all have great respect for them—if you turn them loose, frequently they will find reasons sufficient, in their own mind, for calling into existence appropriations; whereas, if there was a limit placed upon it, a limit placed on the number of men that might be appointed, their activities would be very much lessened.

If our profession were placed wholly under government control, with salaries payable from the public funds, we should yet fall far short of congressional puissance, where a pull on your own bootstraps is all that is required to raise your salary.

Seriously, and to revert to the London letter, it is time to "get busy." I do not have reference to any movement for self-aggrandizement. We must do our part for the general welfare. Much of the "wisdom" of our teeming legislative halls is Poll-parrotism covered with cobwebs. The medical profession possesses a splendid reserve of trained intelligence which can be mobilized for service in legislative and executive positions. The modern education of the physician will prove, in the period of reconstruction, the most valuable asset of the state. It is not bookish exclusively. It commands a view of the fundamental sciences first-hand. The lawyer-politician, deficient as a rule in these vital elements of modern statesmanship, will take his place to the rear.

Finally, the physician's voice will be the voice of the larger humanity. He has never been a man of dollars. His heart beats the rhythm of that of the good Samaritan. He does not patent his inventions for human welfare and seek wealth from their exploitation. He has always carried his load of "charity practice"—a burden that properly belongs on the shoulders of the state. There is no man extant more competent to deal with rampant individualism; for his whole training and life work is a lesson of self-denial and sacrifice.

In the clear dawn of the new political day we shall perceive the outlines of the coming service-state, and shall behold the physician, pill-bags and scalpels for the moment aside, in the front ranks of the "forward looking" men of the time, doing service with the master-builders.

William Y. Ward, M.D., Ivanhoe, Texas.

TREATMENT OF INFLUENZA

To the Editor:—During the recent epidemic of influenza I saw a great number of cases in which one of the most prominent symptoms was hemorrhage from the nose, which lasted usually several days and was often profuse. What struck me in these cases was that none of the patients developed pneumonia and all recovered. . . . Does this bleeding give us a hint to employ bloodletting more frequently in cases in which pneumonia is suspected or beginning to develop?

Julius Martinson, M.D., New York.

To the Editor:—Having passed through a severe epidemic of influenza here we are sure that there have been some important things left unsaid concerning the nature and treatment of this disease. . . . The patient should breathe pure warm air, instead of cold air, which is the popular teaching at this time. With the patient extremely prostrated and perspiring and a further complication with bronchitis, it is certainly a contraindication to apply in the sick room the open air treatment. With the given pathologic condition, the cold air treatment will certainly prove a failure. The patient should breathe cold air in the febrile stage, but should avoid it by all means when that stage passes. The prostration requires rest in bed, and judicious medical stimulation and attention to dietetics.

W. E. Neiberger, M.D., Bloomington, Ill.

"TOMATO LEAVES AND DERMATITIS"

To the Editor:—In The Journal, Oct. 5, 1918, Dr. E. S. Lain of Oklahoma has a paper on "Dermatitis Lycopersicum Esculentum (Tomato Plant)." He calls the tomato "one of our most *harmless* and luscious vegetables." A few years ago there appeared in the *Correspondenz-Blatt für schweizer Aerzte* an observation of several cases of hematuria following the eating of tomatoes. Dr. Lain cites authors who attribute the dermatitis to individual susceptibility and even "anaphylactic reaction of a sensitized person." Is there not another possibility that would at the same time explain the cases of hematuria? The doctor says that the tomato belongs to the *Solanaceae*, nightshades, and mentions several other representatives of this group. But he forgot the most important one, the *Solanum tuberosum*, the potato. This, too, contains a poison in the eyes of the tuber that is removed in boiling. Every farmer knows how sensitive the potatoes are to the conditions of soil, of climate, rain and sun, place of growth, etc., as to development, taste, etc. The same is true of other peculiarities of other nightshades. The nettles, another representative, for example, may be handled with impunity in some places; in others, the slightest touch will have very painful consequences.

The following conclusions may be drawn: 1. The tomato is not under all circumstances "one of our most harmless vegetables." 2. The plant, as well as the fruit, may under certain not yet investigated conditions produce substances that are decidedly toxic to the skin and kidneys, and maybe to other tissues.

Jacques Holinger, M.D., Chicago.

DEVICES FOR DISABLED MEN

To the Editor:—I am sending to you the descriptions of some devices for men having lost one or both arms. They are founded on the last four years of experience among wounded and disabled men in England, and are the work of Dr. Arthur E. Shipley, vice chancellor of Cambridge University, who is now touring this country with the British Educational Mission.

The man who has lost an arm is usually sensitive about it, and does not like to attract attention, especially in public. Among other difficulties are those of cornering food on the ordinary plate. For this purpose Dr. Shipley has designed a plate with an overhanging lip and also a special plate that enables the patient to get the last drop of soup without tilting the plate, a feat that would be impossible for a one-armed man.

For convenience of commerce it has been suggested that the plates should be named, and "Unimanus" has been suggested (cf. Livy 35, 21 and 41, 21), but Dr. Shipley believes that it seems simpler and is certainly shorter to call them "manchot" plates.

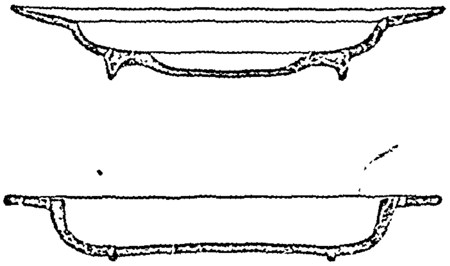


Fig. 1.—Cross-sections of plates devised for persons deprived of the use of one arm: The upper plate is a soup plate with a depression in the center from which the last two or three spoonfuls of soup can be easily removed. The lower plate is for solid food, and has vertical sides and an overhanging rim. Against this, pieces of meat or pudding can be pushed without any risk of their toppling over the edge.

The plates have been made in several styles, some as cheaply as possible, and all may be obtained of Messrs. Thomas Goode & Co., 19 South Audley Street, London. Messrs. Goode, who are solely financially responsible, have kindly consented to devote rather more than 20 per cent. of the profits to the Serbian Relief Fund.

When the patient has been unfortunate enough to lose both arms, he has not even the solace of reading, and the device illustrated enables him to turn over the pages of a book without calling in assistance. The disk which he holds in his teeth is made of rubber, and the shaft is aluminum with a light rubber tip.

If one may learn from the enemy, a good suggestion can be obtained from the fork that is specially made for the kaiser. The outside prong contains a cutting edge which transforms it into a combination knife and fork, and so obviates the use of the knife with the other hand. These would have to be made right or left handed.

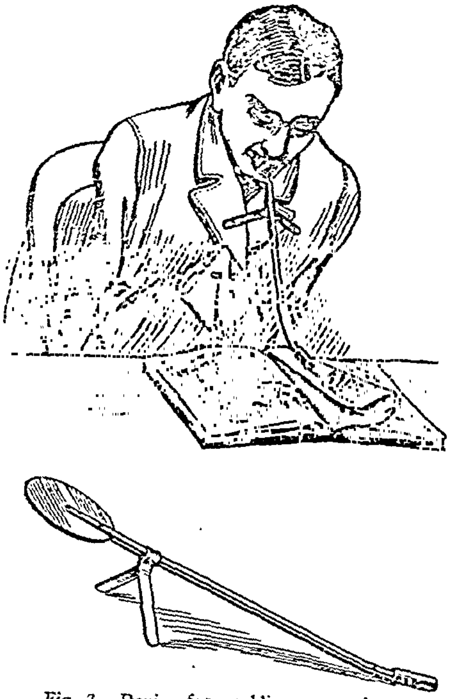


Fig. 2.—Device for enabling an armless person to turn the pages of a book.

I am sure there are many other devices which could render the life of the one armed, or otherwise disabled, much less difficult.

R. Tait McKenzie, M.D., Philadelphia.

AN INTERNATIONAL MEDICAL COUNCIL FOR THE RECONSTRUCTIVE PERIOD

To the Editor:—With the termination of actual hostilities, new problems will confront the medical profession in three main directions: (1) physical fitness; (2) the increased incidence of certain infective diseases, and (3) the insanitary, pestilential conditions resulting from the war.

The ideal method of preparing for this vitally important work would be by the creation of an international medical council to be composed of two or three representatives from each nation belonging to the Allies. The aims of such a body would be multiple, as follows: 1. To promote unity of purpose and action and to maintain friendly relations during postbellum days or the reconstruction period. 2. To exchange information bearing on the conditions, situations and methods, both medical and sanitary, of individual nations, and in this way facilitate the immense work to be done in combating disease, and in hygiene, sanitation and physical reconstruction. 3. Direct assistance could be rendered by one or more nations in unusually trying local situations resulting from devastations. In this connection America would be in a position to lend a strong hand, although we shall not enjoy an immunity from new and difficult medical, sanitary and other problems.

The door is already wide open and invites to professional thought and action in international terms. Shall we enter? The international council herein proposed could be inaugurated and conducted under the auspices of the American Medical Association or the American Red Cross or the Surgeon-Generals of the Army, Navy and Public Health Service, with the official sanction of the President of the United States.

J. M. Anders, M.D., Philadelphia.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

MADURA FOOT (MYCETOMA) IN THE UNITED STATES

To the Editor:—1. Has the true "Madura foot" ever occurred in the United States? 2. Has it been determined how the mycetoma invades the human body?

J. H. M., Texas.

Answer.—1. Under the title "Madura Foot in America," Randolph Winslow says that up to October, 1917, the date of publication of his article, seven cases of Madura foot had been reported in the United States and Canada. Six were of the ochroid form and one of the melanoid form. Three occurred in Mexicans living in Texas, one in a French Canadian who had always lived in Canada, one in a young man born in Iowa, and one in a young woman living in Kansas. J. Homer Wright observed the only case of the black variety reported in this country in an Italian woman who had lived in America for several years. Sutton described two cases in which the *Streptothrix madurae* was found. This is believed to be the organism responsible for true Madura foot, though some authors include the ray fungus of actinomycosis as one of its causes.

2. It is believed that the organism always enters by way of a punctured or other wound, the foot being a favorite site of the disease on account of its exposure among those who go barefoot.

The following may be consulted:

Winslow, R.: Madura Foot in America, Ann. Surg., 1917, **66**, 496.
Adami and Kirkpatrick: Tr. Am. Phys., 1895.
Hyde, Senn and Bishop: Jour. Cutan. and Gen.-Urin. Dis., 1896, **45**, 1.
Sutton, R. L.: Mycetoma in America, The Journal, May 3, 1913, p. 1339.
Burres: Madura Foot in *Western Panama*, Am. Jour. Trop. Dis., 1916, **3**, 610.
Ricketts and Dick: Infection, Immunity and Serum Therapy, Ed. 2, 1911, p. 633.
Solari, E. F.: Madura Foot in Argentina, Semana méd., 1917, **24**, 573; abstr., The Journal, March 30, 1918, p. 967.
Navarro, Horatio: Report of a Case of Madura Foot in Colombia, The Journal, Sept. 21, 1918, p. 967.

Blood Transfusion in Surgical Patients.—Blood transfusion is superior to all other methods for a prompt restoration of the circulation in anemic individuals and is the surest means to prevent the more pronounced, sudden, and usually fatal circulatory depression prone to occur during surgical operations on such patients.—*Review of War Surgery and Medicine.*

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Delaware: Wilmington, Dec. 10-12. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

Florida (E): Jacksonville, Dec. 16-17. Sec., Dr. G. A. Munch, 1806 Franklin St., Tampa.

Florida (R.): Miami, Dec. 2-3. Sec., Dr. W. M. Rowlett, Citizens Bank Bldg., Tampa.

Illinois: Chicago, Dec. 9-11. Mr. F. C. Dodds, Supt. of Registration, Springfield.

Iowa: Des Moines, Dec. 10-12. Sec., Dr. G. H. Sumner, Capitol Bldg., Des Moines.

Louisiana: New Orleans, Dec. 2-4. Sec., Dr. E. W. Mahler, 730 Audubon Bldg., New Orleans.

Maryland: Baltimore, Dec. 10. Sec., Dr. J. McP. Scott, 137 W. Washington St., Hagerstown.

Ohio: Columbus, Dec. 3-5. Sec., Dr. H. M. Platter, State House, Columbus.

Rhode Island: Providence, Jan. 2-3. Sec., Dr. B. U. Richards, State House, Providence.

Texas: Dallas, Nov. 19-21. Sec., Dr. M. F. Bettencourt, Mart.

Virginia: Richmond, Dec. 10-13. Sec., Dr. J. W. Preston, 215 S. Jefferson St., Roanoke.

West Virginia: Charleston, Nov. 19-21. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

Massachusetts May Examination

Dr. W. P. Bowers, secretary of the Massachusetts Board of Registration in Medicine, reports the oral, practical and written examination held at Boston, May 14-16, 1918. The examination covered 13 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 53 candidates examined, 41, including 1 osteopath, passed, and 12, including 7 osteopaths, failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Howard University	(1916)	76.9
Rush Medical College	(1917)	81.7
Johns Hopkins University	(1917)	81.9
University of Michigan Medical School	(1903)	76.9
Boston University	(1917) 78; (1918) 75.8, 77.1, 78.3, 79, 79.2, 80.9, 81.1, 84.4.	
Harvard University	(1911) 79.8; (1912) 80; (1916) 82.6 (1917) 81.5, 81.9, 83.7; (1918) 75.5, 76.7, 79.3, 81.1, 81.2, 81.4, 81.5, 82.2, 82.5, 82.9, 83, 83, 83.9.	
Tufts College Medical School	(1918)	75, 80.4
Bellevue Hospital Medical College	(1892)	80
Columbia University	(1900)	80
University of Pennsylvania	(1883)	80
Meharry Medical College	(1915)	75
Medical College of Virginia	(1917)	76.2
Wisconsin College of Physicians and Surgeons	(1905)	75
FAILED		
Maryland College of Eclec. Med. and Surg.	(1914)	68.1
College of Phys. and Surg., Boston	(1915) 59.4, 67.2; (1917)	71.7
University of West Tennessee	(1916)	62.5

Texas June Examination

Dr. M. F. Bettencourt, secretary of the Texas State Board of Medical Examiners, reports the written examination held at Austin, June 18-20, 1918. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Of the 73 candidates examined, 72 passed and 1 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
College of Physicians and Surgeons, Chicago	(1906)	77.8*
Tulane University	(1917) 88.6; (1918)	87.7, 89.4
Eclectic Medical University	(1918)	77.7, 78.7
University of Pennsylvania	(1918)	88.3
College of Physicians and Surgeons, Memphis	(1911)	71.2†
Meharry Medical College	(1918) 75.6, 77.8, 85.	
Baylor University	(1918) 80.9, 81, 82.7, 85.7, 86, 86.3, 86.4, 87.2, 87.6, 88.7, 89.6, 90.1, 93.5.	
Fort Worth School of Medicine	(1918) 76.1, 76.4, 77.5, 82.4, 82.6, 82.9, 84.7, 85.3, 86.8.	
University of Texas	(1916) 90.3; (1918) 83.3, 84.6, 85, 85.4, 86.1, 86.2, 86.3, 86.4, 86.5, 86.5, 86.6, 87.1, 87.4, 87.5, 87.8, 87.8, 88.9, 88.9, 89, 89.1, 89.3, 89.6, 89.7, 89.7, 89.8, 89.9, 90, 90.2, 91, 91.6, 91.9, 92, 93, 93.8, 93.9.	
University of Virginia	(1918)	86.1
National School of Med., Mexico	(1888) 72+30 yrs.; (1904)	85.9‡
FAILED		
Baylor University	(1917)	73

*Plus 12 years. †Plus 7 years. ‡Plus 14 years.

Social Medicine, Medical Economics and Miscellany

REHABILITATION OF THE WOUNDED

A conference was held in Philadelphia, September 20, by the American Academy of Political and Social Science, at which the rehabilitation of the wounded was discussed. The nature and scope of the problem were presented by Dr. W. W. Keen. He pointed out that the fundamental difference between the surgical conditions during the Civil War and the present world war is our ignorance in 1861 and the enormous increase in our knowledge since that date. The almost virgin fields of battle during the Civil War held few bacteria; although tetanus was not common, it was deadly, killing nine of every ten victims. In the early days of the present world war it exacted a fearful toll of lives, exact figures of which can be given only after the war is over. As soon as there was a sufficient supply of the tetanus antitoxin, the mortality was close to nil. In the Civil War, compound fractures killed two out of every three, and amputations averaged over 50 per cent. mortality. Only 25 per cent. of the cases of compound fractures are now fatal, instead of 66 per cent. as in the sixties. Today the victory over infection is the reason for the greatly diminished number of amputations now done. Moreover, the mortality of amputations at present is low; in some series every one has recovered. While engineering and chemistry have done very much to develop modern sanitation, bacteriology has been the most important factor in this movement. Typhoid has been banished from the Army. In the entire army, numbering over 1,500,000 men at the end of December, 1917, there had been during the year 242 admissions to hospitals on account of typhoid, with eighteen deaths. During the corresponding period in 1861, when the Northern Army was being mobilized, there were about 9,500 cases of typhoid with less than one quarter of the strength of the present Army, with about 1,800 deaths. During the past year there was but one death ascribed to antityphoid vaccination among more than 1,500,000 men. This would seem to be an overwhelming testimony to the value of the method and to the fact that making it compulsory was essential to winning the war. The heart was first laid bare and sewed up for a stab wound twenty-one years ago (1897). Operations on the heart have now been done hundreds of times and have saved the lives of about half of those operated on. In the present war, missiles have been removed from the interior of the heart and even from the large blood vessels.

RECLAMATION OF MAIMED IN INDUSTRIES

Dr. Harry E. Mock, lieutenant-colonel, M. C., U. S. Army, speaking on the reclamation of the maimed in the industries, said that in warfare a number of men are bound to become disabled, but very few need remain so. The Medical Department of the Army began at the earliest moment to plan for the reclamation of the soldiers, and it is desired to make closer the cooperation between the Medical Department and the general public in the reconstruction and rehabilitation of the soldiers and sailors. During the past decade a new specialty has been developed in industrial medicine and surgery. In order to prevent waste, deformity and inefficiency, many industries have appointed a staff of physicians to look after men in the first-line trenches of the industrial army. Today one tenth of the workers of the nation are receiving the benefits of this work. Too often men injured in the industries are given positions without consideration of their fitness; if trained they could fill a gainful position. The most unfortunate among the injured and disabled in the industries are those not employed by the firm for which they worked. They must not only be cured, but trained for and given suitable positions affording them equal income to that received before their disability.

WHAT THE GOVERNMENT HAS DONE

Mr. James Phinney Munroe, vice chairman of the Federal Board for Vocational Education, pointed out that the colossal outpourings of wealth which the orgy of war has forced will possibly be redeemed in one generation by the spirit of saving which, with many other hard and salutary lessons, war has taught. Under the vocational rehabilitation act, the Federal Board for Vocational Education, made up, ex officiis, of the secretaries of agriculture, commerce and labor and the commissioner of education, and of three other members appointed by the President, is charged with responsibility for the placing back in economic life and, if need be, for the training of every soldier and sailor so far disabled in military service as to have become a beneficiary under the war risk insurance law. So long as that soldier or sailor needs daily hospital care or so long as he is adjudged fit to return to full or limited military service, he is the sole ward of the medical military authorities; but from the moment that he is discharged from military service, either because his disabilities are such as to preclude further Army service, or because he is relieved from such duty by the coming of peace, he becomes automatically a ward of the Federal Board of Vocational Education, and as such ward, has established rights which he alone and by his own free choice can surrender. After he has elected to receive training, the board, together with the War Risk Insurance Bureau, assumes not only his support and that of his dependents, should he have any, during the process of training, but also undertakes to follow him up after placement, and to give him reasonable opportunity for further training should the first venture prove ill suited to his capacities. The jobs that these men undertake will be theirs because they are fitted to take them. In this placement the board has the specific right under the law to ask the cooperation of the Department of Labor; it has the general right under the debt that we owe to these disabled men to seek the cooperation of every employer in every line of activity. The government will fulfil its sacred obligation to make these men as efficient as possible physically and also vocationally in the widest possible field of effective economic service.

TRAINING OF THE BLIND

Lieut.-Col. James Bordley, M. C., U. S. Army, discussed the training of the blind in the rehabilitation of soldiers and sailors. He emphasized the fact that in no phase of reconstruction are there more difficulties to overcome than in the training of the blind. The public has the conviction that the blind are industrially useless, forgetting the long list of distinguished blind statesmen, musicians, poets, warriors, merchants and inventors. A blind man can perform any operation except one in which judgment must be based on sight. The Surgeon-General of the Army, working in conjunction with the Surgeon-General of the Navy, has established in Baltimore, on a beautiful estate tendered the government for that purpose by Mrs. T. Harrison Garrett, a hospital training school for the blind sailors, soldiers and marines, and Congress has endowed the Federal Board for Vocational Education with money and power to supplement that training whenever necessary, and to provide the opportunity for employment. The American Red Cross has caused to be organized the Red Cross Institute for the Blind to supply such economic and social supervision as may be found necessary after the discharge of the blind by the various governmental departments. Vocationally, courses are classified as professional, agricultural, commercial, industrial, house work and blind shop work. Individual study of the men must determine into which of these classes they should go. The significance of the work is reflected in the hearty cooperation of every industry studied. If the blind man fails to make good, the employer will be relieved of all embarrassment by the removal of the blind man and his reeducation for another trade.

THE RÔLE OF THE AMERICAN RED CROSS

Mr. Curtis B. Lakeman, assistant to the Director-General of Civilian Relief, American Red Cross, said that the Red Cross will subordinate itself to government leadership and bend all its enthusiasm and resources to the promotion of the official plans and to the filling of such supplemental needs as may arise. Home service offers the channel through which patriotism and neighborliness combine to assist and protect the dependent wives, children, mothers and other relatives of soldiers and sailors. The Red Cross has in operation a special piece of war service machinery peculiarly adapted to assist in the after-care of the disabled soldier. Under the Department of Military Relief of the Red Cross there has been conducted also the pioneering research and educational work of the Red Cross Institute for Crippled and Disabled Men in New York, and the more recently established Red Cross Institute for the Blind supplementing the work of the Army Hospital at Baltimore. The home service organization is assisting the military medical authorities in obtaining essential data as to the previous history of the blind men, in explaining the government's plan to the family, and selecting the relative who will be taken to Baltimore by the Red Cross Institute and trained side by side with the blinded soldier.

READY-MADE FARMS FOR RETURNING SOLDIERS AND SAILORS

Frederic C. Howe, commissioner of immigration at the port of New York, pointed out that the United States Employment Service is a proper agency for carrying through the work of demobilization. All of the warring countries are emphasizing the necessity of returning the soldier to the land. In England, Australia and Canada the farm colony is being developed. Experts have submitted that the soldier will not take up an unbroken piece of land isolated from his fellows. Official commissions in England and Australia are developing plans by which the state will sell to the returning soldiers ready-made farms of from 3 to 30 acres which one man can cultivate. Farms are grouped as a community with educational, recreational and cooperative agencies for marketing and buying. Men are sold farms with a house, barn and sufficient capital on easy terms, the state advancing nine tenths of the capital to be repaid on long-term instalments. The experience of Australia and of Denmark demonstrates the success of this plan. In the United States such colonies should be located in New England, the Southern, Central and Western states, each adjusted to a special kind of farming. Tractors and farm machinery should be owned in common. Such a program involves no permanent burden to the nation. Such a comprehensive agricultural program is demanded by the drift of population to the cities, the growth of tenancy, and the exhaustion of the soil.

OPPORTUNITIES FOR EMPLOYMENT

Miss Gertrude R. Stein, employment secretary, Red Cross Institute for Crippled and Disabled Men, New York, said that the inception of the United States Employment Service has made every one ponder on what an ideal public bureau should be. In initiating an employment bureau for the handicapped, the Red Cross has the advantage of having the bureau a small one. No organization of this kind is truly valuable unless it is flexible. Employment work does not mean the mere securing of positions, but the securing of the chance to make a livelihood at congenial work, with the opportunity to make use of the best powers of the man. In New York there is an effective clearing house which is invaluable in widening the opportunities open to crippled men. A placement bureau for the handicapped must be more efficient than the average bureau or it will not live; it must have a file of satisfied employers who can be called on when the applicant seems suited for their particular job. It should be capable of securing a position for a teacher as well as for an elevator man, for a draftsman as well as for a lathe hand. An industrial survey of the opportunities for cripples in the city must be carried on in conjunction with the employment work. The whole system of placement is valueless unless it is properly followed up. Follow-up work in the factories should be discouraged; it is much better to advise the man and have him settle his industrial difficulties himself. By keeping systematic and full records together with a follow-up system a mass of valuable industrial facts is secured by one of the most economical and effective methods.

FURTHER DETAILS OF GOVERNMENT PLANS

Mr. T. B. Kinder, vocational secretary, Invalided Soldiers Commission of Canada, now on duty with the Vocational Educational Rehabilitation Division at Washington, stated that the United States goes farther than any other country in the care of its fighting men in that it provides that any man entitled to compensation as a result of his injuries may be provided after his discharge from service with a course of training at the expense of the government. In Canada every case is considered individually in the light of every factor with a possible bearing. This plan has been adopted also by the federal board at Washington in dealing with American soldiers. One of the most important factors in this connection is the man's educational history. His industrial history is also of great importance. The disabled man must have the will to succeed with his reeducation and successful placement. The man elects his course, but he must be assisted to select wisely and in the light of all the information with which his vocational advisers can provide him. A careful medical examination is made to determine the man's abilities, and medical and technical experts are consulted. In Canada, 1,347 men have completed courses of reeducation for new occupations; 1,868 are at present taking courses. More than 2,000 men are taking courses during convalescence. Many of the men receiving active treatment in bed are being trained vocationally. The large majority of men completing courses are in positions as good as were held before their service, and many are vastly better off. They are self-supporting, capable members of the community, fulfilling their duties in peace as they did in war. There is now before Congress a bill to provide for vocational rehabilitation for the injured in the industries and their return to employment. Of the men returned to Canada unfit for further military service only about 10 per cent. required reeducation for other occupations. An interesting fact also is that up to June 1, 1918, out of nearly 30,000 disabled men returned to Canada less than 1,500 had suffered a major amputation. The commission has proved the value of the occupation for mind and body of the men. It is disciplinary both for the disabled man himself, in that it prevented that moral and social deterioration always the result of prolonged idleness, and in the institution itself.

WHAT PENNSYLVANIA IS DOING

Mr. Lew R. Palmer, acting commissioner of the state department of labor and industry, said that 50,000 jobs are open and waiting in Pennsylvania for disabled soldiers returning from France. Industrial accidents in this state in two and a half years, ending July 1, have crippled more men than were crippled in the Canadian army in four years of war. Pennsylvania was the first state in the Union to take steps toward providing employment for the blind and the crippled after the war. Seven months before Congress adopted the rehabilitation act, Pennsylvania, through the department of labor and industry, submitted questionnaires to 900 industrial plants to ascertain in what capacity each plant could employ the disabled war veterans. Of the 50,000 jobs awaiting the crippled heroes, 47,000 are in industrial work; 900 are clerical; 16 are in agricultural lines, and 1,200 are miscellaneous. The number of amputations due to industrial accidents in this state were 3,798 in two and a half years, while in the four years of war Canada's army had only 1,200 amputations. In Pennsylvania, 1,157 eyes were lost as the result of industrial accidents, while up to last spring only thirty-four Canadian soldiers had been blinded.

EMPLOYMENT OF DISABLED SERVICE MEN

Mr. Frederic W. Keough, of the National Association of Manufacturers, pointed out that manufacturers will go the limit in appreciation and care of the injured. Bringing the physically unfit and disabled men to an irreducible minimum is a national obligation. If disabilities make it inadvisable for a man to follow his former occupation, he should be fitted for a new occupation by appropriate training. The greatest number of openings undoubtedly are in the clerical fields. In France, blind soldiers have been trained to take dictation on a special machine and to transcribe their notes rapidly and accurately. Among the industries open to disabled men are the plate glass, machinery building, boiler-making and printing. In the underwear industry many firms have offered to take disabled men, one firm even offering to employ them up to one sixth of the operating force. For men who have suffered the loss of their arms, the chemical industry is particularly inviting. The large number of processes that require little manual labor but careful watching make it possible to employ men lacking both arms. One chemical firm in Maryland has offered to take fifteen such men and train them to watch processes. An Ohio chemical firm has made a similar offer. An electrical manufacturer in the United States has discovered that blind men can be employed with great success in winding armatures. Many and varied industrial opportunities have been offered, proving that no industry is entirely closed to these workers. It has been the experience of firms already employing disabled men that they are so keenly appreciative of the opportunity offered that their spirit of willingness more than makes up for the disability. The matter, however, has been most aptly summed up by a New England firm, which says that the crippled workers in its employ are so satisfactory that the firm has often wished it had more such employees.

Book Notices

Modern Dentistry. By Joseph Head, M.D., D.D.S., Dentist to the Jefferson Hospital, Philadelphia. Cloth. Price, $5 net. Pp. 374, with 309 illustrations. Philadelphia: W. B. Saunders Company, 1917.

The author has attempted to cover most of the different branches of dentistry, a difficult thing to do, since no one individual can be equally well informed on such diversified subjects. The chapter devoted to the care of the teeth is well worth reading, and the clear pictures illustrating the proper methods of brushing and otherwise caring for the teeth will be helpful to those who have not given this subject sufficient attention. Some of the conclusions arrived at by the author as a result of his research work are rather startling. For instance, he goes into great detail and has constructed elaborate instruments to prove that decalcified enamel can be rehardened. One cannot but admire the writer's enthusiasm, although his conclusions will hardly be accepted without further verification. The author states that if the pulp of a tooth is destroyed mechanically under a local anesthetic and the root canals filled, the dentin will still live and be nourished by the peridental membrane. This is not in accordance with biologic principles as understood by scientists; if true, the works of Black and others will have to be completely revised.

Under the head of vaccines in the treatment of mouth infections, the author cites some remarkable cures of secondary conditions following their administration. One cannot but wonder if the writer has not attributed too much virtue to the vaccines and not enough to the surgical removal of the primary mouth infection.

There are chapters on filling teeth, orthodontia, prosthetic appliances, roentgenography, etc. The pictures made from roentgenograms have been fairly well selected, and they are clearer and their outlines more distinct than is usually seen in such publications. The illustrations are numerous and excellent.

The Action of Muscles, Including Muscle Rest and Muscle Reeducation. By William Colin Mackenzie, M.D., F.R.C.S., F.R.S., Member of the Council of the Anatomical Society of Great Britain and Ireland. Cloth. Price, $3. Pp. 267, with 99 illustrations. New York: Paul B. Hoeber, 1918.

This book will be of especial value to those having in charge the reconstruction of the soldier who has suffered injury to muscles with loss of function. So impressed is Mackenzie by the importance of scientific rest and reeducation of muscles that he advocates having as a principal feature in every orthopedic institution a department of myology. Massage and electricity should be entirely subsidiary agencies. As one reads his book one is convinced of the ignorance of the ordinary surgeon and of many orthopedic surgeons as to these important matters. The principles underlying the treatment of weak muscles are clearly set forth, with details for the application of these principles in the care of separate muscles. Diagrams and other illustrations aid one to understand the technic.

Medicolegal

Liability of Insurer for Medical Aid Depends on Notice

(American Indemnity Co. v. Nelson et al. (Texas), 201 S. W. R. 686)

The Court of Civil Appeals of Texas reverses a judgment for $150 against the indemnity company that the parents of a boy obtained for the expense of medical services rendered by a physician during the first week after the boy had been injured in an employment in which the employees were insured by the company under the Workmen's Compensation Act of Texas of 1913, because there was no evidence that any notice of the boy's injury was given to the company before the physician was employed by the boy's parents to treat him, or that the company knew of his injury during the time he was being treated. The court says that it seems to it that this statute is plain and unambiguous, and that by its plain terms no association or insurance company organized or acting thereunder in insuring the employees named in the act can be held liable for medical aid furnished an injured employee unless the insurer is given reasonable notice of the injury before such medical aid is furnished. The obvious purpose of requiring this notice to be given is to give the insurer an opportunity to select and contract with a physician of its own choosing. The final result of an injury to an employee and the consequent amount of the insurer's liability may often depend on the medical treatment given during the first week of the injury, and charges for such treatment might be much less when done under a contract made by the insurer than when left to be determined by evidence, which is often conflicting, of the reasonable value of the medical treatment. For these reasons it seems to the court entirely proper that before an insurer is made liable for money paid or incurred for medical aid furnished an insured employee, the insurer should be given an opportunity to furnish such aid. But whatever may be the reason for the statute the court thinks its language is plain and unambiguous, and it must be construed as making the liability of the insurer dependent on failure to furnish medical aid after reasonable notice of the injury. Statutes of other states similar to this one have been so construed. But the majority of the court does not think the right to sue for money paid or incurred for medical services rendered an injured employee is given by the statute to the employee only, but it takes the view that any person who pays for such medical aid or incurs liability therefor may sue the association and recover the amount so paid or incurred.

Performing Necropsy to Ascertain Cause of Death

(Woods v. Graham et al. (Minn.), 167 N. W. R. 113)

The Supreme Court of Minnesota, in affirming an order sustaining a demurrer to defendant Graham's answer, holds that it was no defense to an action to recover damages caused by a necropsy performed on the body of the daughter of the plaintiff, without the consent of the next of kin, that the defendant, as the attending physician, was unable to ascertain the cause of death and performed the necropsy for that purpose so as to be able to give a certificate, as required by law, stating the cause of death. The court says that the plaintiff brought this action to recover damages for a necropsy performed without her consent on the body of her daughter by defendant Graham. His answer admitted performance of the necropsy without the consent of the plaintiff, a widow, and set up as a defense that he was the county physician; that he attended the girl as a charity case in her last illness, and that a necropsy was necessary in order to ascertain the cause of death; that the undertaker in whose hands the body had been placed applied to him to execute the medical certificate required by law, stating the cause of death, and that he was obliged to perform the necropsy in order to be able to give this certificate. The answer alleged that the defendant made the necropsy in good faith, for the purpose of ascertaining the disease or injury which caused the death, and solely that he might be able to make and subscribe such certificate and in order that a permit might lawfully be issued for the burial of the body; it was further alleged that the necropsy was made in a decent and scientific manner, and that no incisions were made that were not necessary in order to ascertain the cause of death.

It was conceded that the plaintiff's consent to the necropsy was not obtained or asked for, and that she had no knowledge thereof until after the necropsy was performed. The defendant claimed freedom from liability on the ground that it was necessary to have the necropsy in order to discover the cause of death and to be able to give the certificate required by Section 4652 of the General Statutes of Minnesota of 1913. That section requires the undertaker to obtain and file a medical certificate subscribed by the attending physician, stating the disease or injury causing death, with contributory cause or complication, etc. Section 4654 provides that a burial permit shall not be issued except on the filing of a proper certificate of death. Section 4658 provides that no body shall be interred until a proper certificate of death has been filed and a permit issued. Section 4662 provides that any person wilfully refusing to perform any duties imposed by the act is guilty of a misdemeanor.

The supreme court agrees with the trial court that the answer stated no defense to the action. The sections of the statute referred to do not in terms authorize a necropsy to ascertain the cause of death. This court is unable to hold that they authorize it by implication. Section 8745 makes it a gross misdemeanor to dissect the dead body of a human being, except in cases "specially provided by statute," or where the direction or will of the deceased authorizes it, or where the coroner authorizes it, or where the "husband, wife, or next of kin, charged by law with the duty of burial, shall authorize dissection for the purpose of ascertaining the cause of death, and then only to the extent so authorized." It cannot be held that this was a case "specially provided by statute."

No Injunction Against Unlawfully Practicing Medicine

(Crowder v. Graham (Texas), 201 S. W. R. 1053)

The Court of Civil Appeals of Texas holds that an order granting a temporary injunction in the suit of plaintiff Graham, as county attorney, to restrain defendant Crowder, a masseur, from unlawfully practicing medicine, must be reversed and judgment rendered vacating the order and the writ issued thereunder. The court says that it is of the opinion that the offense of "unlawfully practicing medicine," within the meaning of the provisions of Chapter 6, Title 12, of the Penal Code, is not a "trade, business, or occupation injurious to the health of those in the neighborhood," within the meaning of Article 694 of the Penal Code and of Article 148 of the Code of Criminal Procedure, authorizing the issuance of a writ of injunction after indictment or information has been filed alleging such offense. Article 694 prescribes as a punishment a fine of not less than $10 nor more than $100, while by Article 756 the punishment prescribed for the unlawful practice of medicine is a fine not less than $50 nor more than $500, and by imprisonment in the county jail for a term not exceeding six months; and those articles are in separate and distinct chapters of the statutes. The acts denounced as an offense in Article 694 constitute a public nuisance under the common law. The court is of the opinion that such is the only character of acts made an offense by that statute, as indicated by those acts described in other articles of the same chapter, which are specifically made criminal offenses and specific penalties are prescribed therefor, and that by Article 148 of the Code of Criminal Procedure it was not intended to authorize the issuance of writs of injunction to restrain the commission of such an offense as the unlawful practice of medicine. It is well settled that, in the absence of some statute specifically authorizing it, an injunction will not lie to restrain the violation of a penal statute, simply because the act enjoined is denounced as an offense, but that an injunction will lie to restrain the act, even though it is an offense, if it constitutes a public nuisance under the common law. The court is of the opinion, however, as indicated above, that the business followed by the defendant would not constitute such a public nuisance.

Society Proceedings

COMING MEETINGS

American Public Health Association, Chicago, Dec. 9-12.
Medical Association of Porto Rico, Ponce, Dec. 14-15.
Southern Surgical Association, Baltimore, Dec. 17-19.
Western Roentgen Society, Chicago, Nov. 20-22.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Sixty-Eighth Annual Session, held at Philadelphia, Sept. 23-26, 1919

(Continued from page 1608)

New Medical Conditions, and Developments in Previously Recognized Complaints, Due to War Emergency

Dr. J. M. Anders, Philadelphia: The enhanced virulence of the streptococcus is the most important problem in dealing with infections of soldiers in the present war. The mortality rate in empyema due to *Streptococcus hemolyticus* is not less than 75 per cent., while in the form due to the pneumococcus, recovery is the rule. The most approved treatment is aspiration, repeated as often as necessary, and intrapleural disinfection with neutral solution of chlorinated soda. Prophylactic vaccination against pneumonia with the hemolytic streptococcus and pneumococci of Types I and II is advised. In the various forms of disordered heart action in soldiers, the patient must not be permitted to entertain the notion that he has a diseased heart. In the higher incidence of tuberculosis in certain foreign countries, the cause in the majority of cases apparently is endogenous, while a considerable percentage may be attributed to primary exogenous infection. According to Sergent, the most trustworthy physical signs of a lesion of the parenchyma of the lung are "dulness, hemoptysis, increased fremitus, 'clicks,' and a veil or shadow at the apices, fixed, not modified by cough with striae and fly spots on the plate." In my view, the examiner of recruits should rely quite as much on a history, presence or absence of fever, the pulse, detection of bacilli in the urine and of antibodies in the blood, as on the physical signs and roentgen-ray findings. Also tuberculous lesions should be searched for in all other organs of the body besides the lungs. The tests to be applied to keep the latent cases of tuberculosis out of military service cannot be too stringent.

DISCUSSION

Dr. Thomas McCrae, Philadelphia: Dr. Anders draws attention to the presence in the Army of problems other than surgical. The cases of disturbed heart action are the bane of every medical man in the Army. Infection plays a very small part. This is true also of internal gland secretion. The overwhelming factor is the nervous element. There is nothing concerned with the disordered heart action as seen in the Army that one does not see in civil life. Dr. Anders suggests the possibility of aggravation by the strain of war; many of the men never get to war. One very big problem is the part played by tobacco. I think it is agreed that while tobacco may not have been the original cause of the condition, it plays a large part in aggravating it when once present, and it is a very difficult problem to handle in the Army. When the quantity of tobacco used by a man amounts to forty cigarets a day it must be realized that he is taking a drug that poisons him. The question of the proper allowance of tobacco to men with disturbed heart action should be considered. Regarding the question of a certain number of men being sent back from the French front line with a diagnosis of tuberculosis when only a certain proportion had the disease, I think there is no reflection on the diagnostic ability of the French surgeons. It is to be remembered that all these men had lost weight, and the majority had acute bronchitis with bloody sputum; signs were probably present throughout the lungs. To say whether or not they had acute tuberculosis passes the ability of any man up in the front and of the man in the base hospital until he has time to observe them.

Coordination of Laboratory and Clinical Researches in Pneumonia

Dr. S. Solis-Cohen, Philadelphia: See abstracts in The Journal, June 1, 1918, p. 1635.

DISCUSSION

Dr. David Riesman, Philadelphia: In no disease is the close cooperation of laboratory workers and clinicians more opportune than in pneumonia, the most fatal and most serious infectious disease we have to deal with in this climate. I cannot feel that quinin is a specific in pneumonia. Of serums we have only one that is of value. The problem of pneumonia must be attacked more from the point of prevention than hitherto. From the standpoint of a sanitarian and a physician, one of the most important discoveries is that a healthy carrier may spread the disease.

Dr. George D. Heist, Philadelphia: In our research work we found that the serum of one man who had received 5 and sometimes 10 grains of quinin dihydrobromid every three hours over a period of a number of days killed pneumococci with great regularity after an exposure for twenty-four hours. In other cases the pneumococci were very decidedly inhibited in their growth. The bactericidal elements in the serum was proportionate to the quantity of quinin received by the patient. The dihydrobromid was the most active salt. The serums of recovered patients and of those who received no quinin showed no bactericidal action. Dr. Cohen had long pointed out to us that the patient with pneumonia does not feel the quinin as does one not having the disease. This observation was confirmed by me in our work.

Dr. S. Solis-Cohen, Philadelphia: Quinin has never been put forth as a specific in pneumonia. Midway between the expectant treatment and treatment by serums and bacterins is the definite method of the treatment by quinin: quinin given in a definite way and for a definite purpose. In my own experience no other medicinal treatment is equal to it.

Laboratory Methods: Their Value and Practicability in General Medicine

Dr. M. Howard Fussell, Philadelphia: I wish to plead for accurate diagnosis, possible only by history taking, thorough physical examination, and routine laboratory examinations. The man does not live who can guess at conditions and not sooner or later take a cropper. I would advise the man not educated in the more accurate diagnostic methods to associate with himself a young man who can do this routine work for him.

DISCUSSION

Dr. Henry Rhea Douglas, Harrisburg: A boy, aged 9 years, was treated for years for an eye condition accompanied by anemia and glandular enlargement. Subsequent laboratory examination revealed a + + + + Wassermann reaction.

Dr. H. W. Mitchell, Warren: Laboratory study practically settles all doubt in diagnosis in a large group of patients admitted to the hospitals for the insane.

Dr. Paul G. Weston, Warren: I would enter a plea for the more frequent use of lumbar puncture for diagnostic purposes. The technic is simple and does not require extraordinary skill. The chemical analysis of the blood should accompany urinalyses.

Dr. Charles Rae, York: To be borne in mind in making our diagnoses is the relative unimportance of negative findings. I would emphasize the importance to every man with a large practice of having a trained assistant to do his laboratory work.

Some Drug Eruptions

Dr. M. B. Hartzell, Philadelphia: A large number of drugs produce eruptions, but relatively few affect all individuals. The same drug does not always produce the same form of eruption. The iodids usually produce an acneiform eruption, but may cause more serious conditions; the same is true of the bromids. The hypnotics frequently produce eruptions of varying character; those resulting from the administration of barbital are often accompanied by severe itching and burning; a chronic pruritus may be a symptom of opium addiction. The preparations of arsenic occasionally produce herpes zoster; they cause a variety of keratosis possibly followed by epithelioma. Arsphenamin sometimes causes a violent dermatitis with symptoms of nephritis. In the presence of an unusual form of eruption, the possibility of its drug origin should be considered.

DISCUSSION

Dr. Julius H. Comroe, York: In one case the administration of 270 grains of potassium iodid, three times a day, in ascending doses, for almost three months failed to produce the least suggestion of a rash, yet in another case the administration of 3 grains developed a most intense rash. Rather than advise routine ascending doses, it would seem better practice to treat each case as an individual entity, and on the slightest evidence of a rash, either diminish or interrupt the dose; also by giving more attention to the emunctories during the administration of bromids, iodids, etc., we should be meeting in a better way the prophylactic requirements of the problem.

Follow-Up System of the Pennsylvania Department of Health for Former Tuberculous Patients

Dr. Karl Schaffle, Harrisburg: The follow-up system of the Pennsylvania Department of Health for the tracing and reporting of patients discharged from the state sanatoriums and dispensaries consists in actual face-to-face inquiry and inspection of the former patient by the dispensary nurse who has been intimately acquainted with his physical condition and economic status during his enrolment as an active case. One hundred and thirty nurses carry on these special investigations throughout the state in addition to their supervision of the home care of those in regular attendance. Such follow-up visits are made for a period of two years after the patient's discharge, at intervals of six months.

DISCUSSION

Dr. B. Franklin Royer, Harrisburg: In dispensary and sanatorium treatment some such follow-up system must be relied on to prove the end-results. The campaign of tuberculosis is almost wholly an educational one; we aim to teach the individual how he should live in order that Nature may effect the cure. After all, it is a question of food and open air, rest when needed and exercise when needed. It is a careful direction of the habits of life which results in the cure of the individual once infected, and it is a question of teaching that individual such methods of living that he will not infect the children who surround him. It will take from twenty-five to fifty years of just such an intensive educational drive in order to reach a point where our final statistics will show.

Dr. Charles H. Miner, Wilkes-Barre: One part of the work in the dispensary is of special interest today, and that is to look up the soldiers who register and who have been rejected by the draft boards and the Army camps for tuberculosis. At this time, of course, that is of greater importance than almost any other feature of the tuberculosis work of the department because many of these men have never suspected that they had any trouble of that kind and they especially should be sought out and urged to secure some advice and treatment. Many of them are very skeptical about having any trouble and are patients who need the advice of the nurses and the physicians at the dispensary.

Dr. Karl Schaffle, Harrisburg: We have received through the cooperation of Major Murdock, who is in charge, the names of more than 1,200 draftees rejected by selective service boards throughout the state, and we write a letter to each man so rejected telling him that we have received confidential information that he has been rejected on account of tuberculosis and advising him to seek treatment through his family physician, or through a private institution if he can afford to do so, or, if not, through the department by means of its dispensaries and sanatoriums. We follow up that letter by sending a dispensary nurse from the dispensary nearest the man's home to call on him personally, and to explain the matter at great length, and to urge that he seek treatment because practically all of these cases are the early cases, cases that are curable. We have the same difficulty, however, that we have with the average incipient case. A great many of these persons refuse to believe they have the disease.

Present Status of the Treatment of Syphilis

Dr. Jay F. Schamberg, Philadelphia: There are three recognized drugs in the treatment of syphilis—arsphenamin, mercury and the iodids. Arsphenamin is generally recognized to be the remedy of paramount value. Its effect on symptoms is due to the fact that it has a powerful destructive effect on the spirochete and that it may be administered in large dosage. Arsphenamin is fifty times less toxic for experimental animals than is mercury. Arsphenamin likewise has a roborant or tonic effect which mercury does not possess. The spirochete is vulnerable to arsphenamin and to mercury. The iodids do not appear to have direct destructive influence on the spirochete. Wechselmann has warned against the use of mercury precedent to the use of arsphenamin, on the grounds that most of the arsphenamin fatalities are due, in large part, to renal insufficiency, and that in the majority of cases it was mercury that damaged the kidneys. My belief is that the use of three inunctions of mercury a week is a valuable measure to associate with the use of arsphenamin, particularly in the primary and secondary stages of syphilis. No one is in an authoritative position today to state how long the treatment of syphilis should continue. Too often the physician will cease treatment after a single series of arsphenamin injections and perhaps a course of mercury, because the Wassermann reaction has become negative. Experience proves that such a course usually requires the later resumption of treatment, with valuable time lost. While it is difficult to prescribe any routine formula, we may at least indicate an irreducible minimum of treatment. Before any patient with syphilis is discharged from observation, a diagnostic spinal puncture should be made.

DISCUSSION

Dr. Francis X. Dercum, Philadelphia: Arsphenamin has been used extensively at the Jefferson Hospital, and I have used it in the exudative form and in the form represented by tabes and paresis. Our experience with regard to paresis has been that not infrequently we had remissions. I am glad to hear Dr. Schamberg say he uses inunctions every other day. In the old days they were used every day. I use half a dram of mercury every other day with arsphenamin and feel my way. I think we use the drug too frequently. There ought to be an interval of ten days or two weeks. Very frequently I allow an interval of two weeks.

A Method of Tracheotomy Without Loss of Blood

Dr. Donald Guthrie, Sayre: The low operation of trachetomy, unless there is an enlargement of the thyroid, is the more suitable for all cases—even the struggling child. The child is wrapped in a blanket or sheet to control its struggling and placed on the table. A pad of some sort is put under the shoulders, and the head is hung over the end of the table—steadied by an assistant. The operator stands on the right hand side of the table and, steadying the skin with the left hand, makes an incision in the midline of the neck from 1½ to 1¾ inches long. The skin and the superficial fascia are incised and the wound is held open by a pair of catspaw retractors which should not be more than an inch in breadth. When the deep cervical fascia is cut, the parallel branches of the anterior jugular veins are seen in the wound. The retractors are reset to pull these veins aside, and the sternohyoid and sternothyroid muscles are separated by blunt dissection. If care can be exercised during this step of the operation, the muscles can usually be separated without injury to the thyroid ima beneath. The retractors are again reset, the left blade holding aside the skin, the fascia and the two muscles, and the right blade the skin fascia, the muscles and the thyroid ima vein. This exposes the trachea to view. It is incised, the head is straightened, and the tracheotomy tube inserted. This method has been employed fourteen times in all types of cases.

DISCUSSION

Dr. George P. Müller, Philadelphia: From my own thought and experience I mostly disagree with Dr. Guthrie. Surgeons know the exact anatomy of these structures. They are used to dealing with hemorrhage and do not have the slightest fear of it. It does not matter to a surgeon whether he does a high or low tracheotomy; but it seems to me that it is by no means as easy for the general practitioner to do the low operation as the high. When it comes to operation in emergency in a patient with diphtheria or membranes, or other choking condition in the upper air passages, the high operation is preferable. A low tracheotomy is dangerous if suppuration results, as it is liable to travel into the mediastinum.

Anatomic Incision for Groin Surgery

Dr. J. Norman White, Scranton, Pa.: An incision 3 inches long, three-fourths inch external to the spine of the pubes, commencing at and at right angles to Poupart's ligament and extending toward the umbilicus gives access to the inguinal canal and round ligament, and extension downward and slightly inward exposes the femoral ring. If a femoral has been mistaken for an inguinal hernia, or vice versa, no new incision is required nor extensive prolongation of the one already made. The wound never fills with fluid, as often happens with other incisions. No blood vessels need be tied because none are cut. The incision is parallel rather than across the blood and lymph vessels. Leaving the blood and lymph supply intact infection is less frequent. Any operation in the inguinal region can be performed through the one incision including appendectomy.

DISCUSSION

Dr. T. Turner Thomas, Philadelphia: I have tried this incision in about a dozen cases. It does not give the same free and easy exposure of the canal as does the ordinary oblique incision. The novice would have trouble in locating the external oblique ring, but the experienced operator would not. Very few, if any, blood vessels are divided. There is enough advantage in the small number of blood vessels divided to warrant using this incision in spite of the little restriction in the exposure of the field.

Thoracic Surgery

Dr. George P. Müller, Philadelphia: Pierre Duval has shown that the exposure of the lung and the removal from it of a foreign body is as safe as most other major operations, and not only enables us to remove the bullet but also to clean the pleural cavity of its contained blood clot. Shortly after the receipt of the injury, when reaction has occurred, ether is administered by the open method (an endotracheal apparatus is not necessary), and an incision 9 or 10 inches long is made over the fourth or fifth rib. About six inches of the rib is then removed, and after cutting the intercostal membranes the pleura is carefully separated with the fingers above and below for some distance, to mobilize it. The pleural membrane is then rapidly divided the full length of the opening and a rib spreader is placed in position rapidly and sprung open. The lung is then taken by a pair of grasping forceps and pulled to the wound. If these maneuvers are done rapidly the mediastinum is steadied before the pneumothorax has had time to work injury to the circulation. The lung can then be drawn out onto the chest, the bullet easily felt, the lung incised over the bullet, which is removed, and the incision closed by one or two fine catgut sutures. Blood clots are scooped out, the cavity is gently mopped and disinfected, if thought necessary, by ether (Duval) or perhaps by neutral solution of chlorinated soda. The lung is then replaced but still steadied by the grasping forceps and the pleura is closed. The muscles are next pulled together with catgut mattress sutures and the skin is sutured with silkworm gut. No drainage should be introduced. Finally, the pneumothorax is emptied by aspiration. If it is determined not to search for the bullet, aspirate the pleural cavity on the slightest suspicion of the onset of infection, and if coverslip smears confirm suspicion, the chest must be opened and drained.

DISCUSSION

DR. SAMUEL J. MELTZER, New York: About eight years ago I constructed a simple apparatus for intratracheal insufflation for Dr. Carrel. I have seen many of his experimental dogs in which the thorax was transversely opened widely—double pneumothorax. These dogs recovered without having had an infection. In the course of the last year, I demonstrated to several hundred military officers anesthetized and curarized dogs with the chest wide open. The entire heart was exposed to full view. The animals were kept alive and with normal blood pressure by pharyngeal insufflation. I have often demonstrated a fact of practical importance, namely, that if artificial respiration was sufficient, the heart could be handled freely with impunity; but even a slight touch of the heart ofen led to fatal fibrillary contractions if the artificial respiration was suspended or was insufficiently executed.

Operation: Designed to Permit Future Childbearing, Without Complications

DR. JOHN COOKE HIRST, Philadelphia: My experience with this operation comprises a total of 141 cases. Not all these women were of child bearing age, though the majority were, but the same technic was used in all of them. I have seen no primary failures, and none of the cases have required a second operation, as far as I know. The result as to subsequent delivery: Of forty-nine known cases, seven have become pregnant. Of these, two miscarried, due probably to overexertion, of which there was a definite history in each case. Five went through labor at term, one of them twice. Four of the five, including the one with two deliveries, show a very normal looking anterior vaginal wall, the surgical result is good, and they are symptomatically well. In the fifth case there is a measure of recurrence. The anterior wall sags considerably, but nothing like the extent of the previous cystocele. The patient is symptomatically well. Whether the cystocele will increase in size, it is as yet too early to determine. It seems to be stationary up to the present.

(To be continued)

INTERSTATE ASSOCIATION OF ANESTHETISTS

Fourth Annual Meeting, held at Indianapolis, Sept. 25-27, 1918

(Concluded from page 1607)

What the Expert Anesthetist Should Be

DR. A. S. MCCORMICK, Akron, Ohio: A specialist in any branch of medicine or surgery must have the foundation of a proper academic and professional education, with considerable general experience and a great deal of special study and practice of his chosen branch. Aside from this he must have a liking and aptitude for his specialty if he is to succeed in it. Furthermore, he must devote his time exclusively to his particular line of work. In anesthesia these requisites would comprehend a collegiate course, followed by four years at an A 1 medical school, which gives proper attention to anesthesia in its curriculum and clinics, an internship in a hospital in which anesthesia is under the control and supervision of experts, then postgraduate study in various centers where the latest methods of anesthesia may be studied and tried out, followed by intensive practice of the specialty in some chosen community in which there is an opportunity for becoming connected with several prominent surgical teams or hospitals in which surgery is on a distinct plane of excellence. Having achieved this much, the anesthetist owes it to himself to maintain an equipment of apparatus that will enable him to meet the anesthetic requirements for any surgical procedure with safety and comfort to the patient and satisfaction to the operator.

The Anesthetist on the Hospital Staff

DR. ISABELLA C. HERB, Chicago: In accepting a staff position at any hospital, the anesthetist should assume all the duties and responsibilities applying thereto with a sense of their seriousness, for life itself is being entrusted into his keeping. As a member of the staff he is virtually a consultant, and if he is at all competent he will be in a position to advise with regard to the proper preparation of all patients for anesthesia and operation. He must know how to care for patients postoperatively so that no matter how hazardous or desperate the operative procedure or how difficult the anesthesia, the patient's convalescence can be assured and protected from untoward incidence of shock, hemorrhage, pneumonitis or toxemia.

If he is staff anesthetist to a teaching hospital, he should constantly be working out the newer problems in his specialty and utilizing the interns and nurses at his disposal for the technical phases of this clinical or research activity. As a member of the staff, the anesthetist should take an especial pride in the anesthetic and operative records of his hospital. If the institution provides the opportunities and facilities for giving postgraduate instruction in anesthesia, the staff anesthetist should develop himself to the point at which he can handle this additional responsibility with credit to himself, his hospital and with satisfaction to his students. The staff anesthetist should participate as much as possible in the experimental phases of hospital and faculty research that has any anesthetic interest, so that this phase of the research may be coincidentally developed and recorded.

The Downtown Anesthesia Clinic

DR. RALPH M. WATERS, Sioux City, Iowa: For a long time there has been a widespread need for some sort of facility for performing minor surgical and dental procedures without taking patients to the hospital. This need has been felt by surgeons and dentists alike, and within the past few years some effort has been made to meet it by the establishing of so-called downtown anesthesia clinics in some of the larger cities of the country by specialists in anesthesia. These clinics are situated, as a rule, in buildings especially arranged for professional service, and within easy access of all means of transportation. These clinics are in charge of some specialist in anesthesia who arranges the apartment to care for patients before, during and after operation, and provides all facilities for the surgeon or dentist to perform any operation that may be desired, under safe and efficient anesthesia, administered by an expert and with proper nursing assistance, if required. In this way the busy surgeon and dentist can accomplish operative procedures without discommoding himself or his own offices, also being relieved of the preparation and after-care of the patients. These clinics have been unusually successful. All professional arrangements with regard to patient and operation are made through the physician or dentist, and all financial arrangements for the service rendered direct with the patient.

Such a clinic must have several retiring rooms fitted for the preparation and after-care of patients, an operating clinic adapted to any minor surgical or dental procedure, with the best of equipment, and a business office. The staff is composed of the anesthetist and an office attendant, and one or more trained nurses as the work done may require.

Anesthesia in the Curriculum and Clinic

DR. WILLIS D. GATCH, Indianapolis: The development of modern surgery has resulted not only in improved methods of administering anesthetics, but also in an intensive study of shock, postoperative complications, and the by-effects of anesthetic agents in relation to the resistance of tissues to disease. Thus instruction in anesthesia must be broadened to include all that is important in this collateral material. To meet this requirement, as a professor of surgery, I emphasize the study of surgical physiology in the second year of the medical course, in which are included all pertinent data regarding anesthesia in its relation to surgical technic and its effects on the patient. Only after the students have been well grounded in these essentials are they inducted into the routine administration of anesthetics. In the clinical work of the third and fourth years the same matters are frequently emphasized at the bedside and in the operating room. By this method we dispense with the necessity of a formal course, and present the subject of anesthesia in its proper relations to clinical medicine and operative surgery.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

November, 1918, **16**, No. 5

1 *Infant Feeding. High Protein Feeding vs. High Calcium Absorption as Cause of Increase in Body Temperature of Infants. A. W. Bosworth and H. I. Bowditch, Boston.—p. 279.
2 *Effect of Alkali and Malt Preparations on Retention of Calcium in Infancy. A. Sato, Japan.—p. 293.
3 *Relative Efficiency of Different Mercurial Preparations in Treatment of Congenital Syphilis in Infants and Children. W. R. Ramsey, St. Paul, and M. R. Ziegler, Minneapolis.—p. 299.
4 Case with Vascular, Joint, Muscle and Skin Disturbances of Uncertain Etiology. R. M. Smith and W. R. Sisson, Boston.—p. 307.
5 *Migraine in Childhood; Report of Case. W. Tileston, New Haven, Conn.—p. 312.

1. **Calcium Absorption.**—The experiments reported on by Bosworth and Bowditch show that the ingestion of large amounts of calcium and the absorption of this calcium as organic salts, if not accompanied by the ingestion of sufficient chlorin or phosphorus to permit of the formation of soluble salts will result in an accumulation of calcium in the tissues which is followed by a toxic condition and the elimination of calcium lactate in the urine. The toxic condition produced when a high protein synthetic food was fed was probably the result of the high calcium content of the food, and not the result of the high protein content, the protein being responsible only to the extent that it is the carrier of the calcium in the form of calcium caseinate. Whether the toxic condition is the result of the accumulated calcium itself or to a calcium salt, possibly calcium oxalate, the authors are not prepared to state.

2. **Effect of Alkali and Malt Preparations on Retention of Calcium.**—Sato's experiments were made on the same child and with the same malt preparation in order to determine whether the beneficial effect on the calcium retention attributed to malt extracts is due to the extract itself or to the added alkali. He found that the addition of alkali to milk produced not only no favorable effect on the retention of calcium but a distinctly unfavorable one. Malt extract alone without alkali acts beneficially on calcium storage. If malt soup has a favorable effect on calcium metabolism, it is not as a result of the alkali originally contained in it or added to it. Malt extract to which a considerable amount of alkali has been added seems to have a rather unfavorable influence on the calcium balance.

3. **Mercurial Preparations in Treatment of Congenital Syphilis.**—A series of experiments was undertaken by Ramsey and Ziegler to determine, if possible, the extent of absorption of mercury into the circulation as indicated by the elimination in urine, when the ordinary methods and dosage were employed and the time during which mercury continues to be eliminated in the urine after the mercury has been discontinued. The effects of the various forms of mercury on the kidneys as determined by the appearance of protein, casts, or blood in the urine, was also to be estimated when possible. In infants and children, mercury, when given by the mouth, by inunction or intramuscularly, is excreted at least partly by the urine. In new-born infants and older children mercurial ointment when placed in contact with the skin, without any friction being used (protected and sealed by wax paper from being volatilized and inhaled), is taken up by the skin and excreted in the urine and continues to be excreted in the urine for a variable time after all treatment has been discontinued. By inunction (with rubbing) mercury is readily taken up by the skin and eliminated in the urine and continues to be eliminated for a considerable time. When one inunction is given, the maximum daily amount of mercury is usually eliminated during the following twenty-four hours, smaller amounts being eliminated for a variable time. Where continuous inunctions are given there is an accumulation in the system and considerable amounts are eliminated at intervals with only traces between. It is, therefore, probable that it is unnecessary to have mercury in contact with the skin, either with or without rubbing as often or as long as has been generally thought necessary. This, however, must be determined by further clinical investigation.

Mercuric salicylate suspended in oil and given subcutaneously continues to be eliminated in the urine in appreciable amounts for eight days, or longer, the daily amounts eliminated varying widely. It is, therefore, probable that a repetition of the treatment, not oftener than at intervals of eight days would be sufficient. Mercuric chlorid by intramuscular method continues to be eliminated for eight days or longer. In all cases in which mercuric chlorid was used either by mouth or the intramuscular method protein was found in the urine.

Calomel, 0.016 gm. every two hours for four doses, and gray powder, 0.03 gm. every three hours for three doses, continued to be eliminated in appreciable amounts in the urine for as long as nine days; the maximum daily elimination usually occurred during the twenty-four hours following administration. It is, therefore, probable that the daily use of any of the mercurial salts in the amounts usually prescribed, is unnecessary and presumably harmful.

5. **Migraine in Childhood.**—Tileston's patient was 6 years of age. Since the age of 3 years, he had been subject to periodic attacks of headache, accompanied by vomiting. Acetone occurred abundantly in the urine at these times. The attacks came at intervals of from one to three months, as a rule, but had occurred as often as once a week. There was an aura the day before, consisting of pallor, nervousness and an abnormal appetite, usually poor, but sometimes increased to a pathologic degree. The headache was intense and always preceded the vomiting; it was bilateral and frontal in distribution and accompanied by photophobia. The duration of the attack was about twenty-four hours. Between attacks the boy was well and free from headache. There has been a distinct intolerance of eggs; if he takes more than one egg a week he is almost certain to have an attack. He has not taken large quantities of meat. The treatment consisted in withdrawal from school, the correction of the refractive error and alteration of the diet. Throughout the month of Marsh no meat or fish was eaten. During April the child was put back on his former diet. It was now found that he had an increased tolerance for eggs, he has been practically free from headache since beginning of treatment, having had but one slight attack from March to June, 1918.

American Journal of Ophthalmology, Chicago

October, 1918, **1**, No. 10

6 Parinaud's Conjunctivitis. (Leptothricosis Conjunctivae.) F. H. Verhoeff, Boston.—p. 705.
7 Transient Relapsing Enophthalmos of Sympathetic Origin. J. de J. González, Leon, Mexico.—p. 713.
8 Glioma of Retina, Three Cases Treated with Radium. R. Duncan,, Los Angeles.—p. 715.
9 Plasmoma of Conjunctiva (Pascheff). K. Hiwatari, Kyotom, Japan.—p. 719.
10 Solid Edema; Report of Three Cases. W. B. Weidler, New York.—p. 722.

Arkansas Medical Society Journal, Little Rock

October, 1918, **15**, No. 5

11 Foreign Bodies in Trachea and Esophagus. R. Caldwell, Little Rock.—p. 84.
12 Case of Meckel's Diverticulum. E. E. Barlow, Dermott.—p. 86.

Boston Medical and Surgical Journal

Oct. 24, 1918, **179**, No. 17

13 Venereal Disease. C. M. Smith and O. M. Lewis, Boston.—p. 525.
14 Rodent Ulcer. W. Beatty, Dublin, Ireland.—p. 527.

Endocrinology, Los Angeles

April-June, 1918, **2**, No. 2

15 Thyroid Hormone and Its Relation to Other Ductless Glands. E. C. Kendall, Rochester, Minn.—p. 81.
16 Pituitary Body and Polyuria. B. A. Houssay, Buenos Aires.—p. 94.
17 Seasonal Variation in Iodin Content of Thyroid. F. Fenger, Chicago.—p. 98.
18 Confusional Insanity and Ovaries; Case History. G. H. Hoxie, Kansas City, Mo.—p. 101.
19 Diabetes Insipidus. K. Motzfeldt, Christiania, Norway.—p. 112.

20 Vascular Changes Produced by Epinephrin in Vertebrates. F. A. Hartman, L. G. Kilborn and R. S. Lang, Toronto.—p. 122.
21 *Suppuration of Goiterous Thyroid Following Administration of Thyroid Extract. E. A. Tracy, Boston.—p. 143.
22 Case of Parathyroid Insufficiency. A. F. Hertz, London.—p. 145.

21. Goitrous Thyroid Following Administration of Thyroid Extract.—When first seen Tracy's patient, a woman, aged 51, was melancholic and sleepy in the daytime. She had a moderate-sized goiter. A half grain dessicated thyroid after each meal was prescribed. After a week's administration of the material the right lobe of her thyroid became painful. The treatment was stopped. After two weeks the painful lobe reddened and a week later "broke," three days after the patient, on her own volition, had applied a bread and water poultice. The mental condition cleared up rapidly after the administration of the desiccated thyroid. Tracy points out that this case illustrates the care with which thyroid extract must be given in such cases. In goiter, with myxedema symptoms, he should commence with half a grain of desiccated thyroid a day, and watch carefully for the least sign of trouble, such as slight pain in the thyroid. On its appearance he omits the medication. Enough may have been given to awaken the dormant tissue to renewed activity. If not, one should carefully renew medication, and watch again.

Illinois Medical Journal, Chicago

October, 1918, **34**, No. 4

23 Personal Experiences Concerning Operation for Senile Cataract. F. Allport, Chicago.—p. 185.
24 Status Thymus Lymphaticus; Report of Case. E. F. Garraghan, Chicago.—p. 189.
25 Focal Infection in Relation to Diseases of Eye. T. Faith, Chicago.—p. 193.
26 Some Eye Injuries that Can be Prevented. W. O. Nance, Chicago.—p. 199.
27 Treatment of Intranasal and Accessory Sinus Diseases. O. J. Stein, Chicago.—p. 202.
28 Middle Ear Infections. C. E. Price, Robinson.—p. 204.
29 Case of Multiple Sclerosis with Eye Findings. E. R. Crossley, Chicago.—p. 209.
30 Ligature of Vessels to Arrest Hemorrhage after Tonsillectomy. H. R. Boettcher, Chicago.—p. 212.
31 Spontaneous Pulsating Exophthalmos. G. W. Boot, Chicago.—p. 217.

Journal of Biological Chemistry, Baltimore

October, 1918, **36**, No. 1

32 *Uric Acid Metabolism. I. Influence of High Protein Diets on Endogenous Uric Acid Elimination. H. B. Lewis and E. A. Doisy, Urbana, Ill.—p. 1.
33 *Id.: II. Proteins and *Amino-Acids* as Factors in Stimulation of Endogenous Uric Acid Metabolism. H. B. Lewis, M. S. Dunn, and E. A. Doisy, Urbana, Ill.—p. 9.
34 Rôle of Inorganic Sulphates in Nutrition. A. L. Daniels and J. K. Rich, Madison, Wis.—p. 27.
35 Methods for Determination of Phosphoric Acid in Small Amounts of *Blood*. W. R. Bloor, Boston.—p. 33.
36 *Distribution of Phosphoric Acid in Normal Human Blood. W. R. Bloor, Boston.—p. 49.
37 Cholesterol in Milk. W. Denis and A. S. Minot, Boston.—p. 59.
38 *Vitamin* Studies. Catalase Activity of Tissues in Avian Polyneuritis. R. A. Dutcher, St. Paul, *Minn.*—p. 63.
39 Epimeric Hexosaminic Acids. P. A. Levene, New York.—p. 73.
40 Action of Nitrous Acid on Epimeric Hexosaminic Acids. P. A. Levene, New York.—p. 89.
41 Colorimetric Determination of *Phenols in the* Blood. S. R. Benedict and R. C. Theis, New York.—p. 95.
42 *Phenols and Phenol Derivatives in Human Blood in Some Pathologic Conditions. R. C. Theis and S. R. Benedict, New York.—p. 99.
43 Mucins and Mucoids. P. A. Levene *and J.* López-Suárez, New York.—p. 105.
44 **Antiscorbutic* Property of Desiccated and Cooked Vegetables. M. H. Givens and B. Cohen, New Haven, Conn.—p. 127.
45 *Colorimetric Estimation of Cholesterol *in* Blood, with Estimation of Coprosterol in Feces. V. C. Myers and E. L. Wardell, New York.—p. 147.
46 *New Volumetric Method *for Determination* of Uric Acid in Blood. L. J. Curtman and A. Lehrman, New York.—p. 157.
47 *Nutritive Value of *Banana*. K. Sugiura and S. R. Benedict, New York.—p. 171.
48 *Preparation of Antipolyneuritic Substances from Carrots and Yeast. K. Sugiura, New York.—p. 191.
49 **Dietary* Properties of Potato. E. V. McCollum, N. Simmonds and H. T. Parsons, Baltimore.—p. 197.
50 Decreased Plasma Bicarbonate During Anesthesia and Its Cause. Plasma Carbon Dioxid, Blood and Urine Ketone, and Blood Catalase Analyses in Operative Patients. S. P. Reimann and G. H. Bloom, Philadelphia.—p. 211.
51 Influence of Certain Salts on Enzyme Action. I. S. Falk, New Haven, Conn.—p. 229.

32. **Studies in Uric Acid Metabolism. I.**—Normal men were maintained by Lewis and Doisy on purin-free high protein diets of high and low content in arginin and histidin. No differences in the excretion of uric acid following the ingestion of these two types of high protein diet were evident. This would indicate that, under the experimental conditions of the present study, arginin and histidin function no more than the other constituents of the protein molecule in the stimulation of the output of endogenous uric acid following ingestion of a high protein diet.

33. **Id. II.**—The subject of this experiment was a healthy young man, 22 years of age, and about 58 kg. in weight. During a period of over six months, a meat-free low protein diet, free also from purin-containing beverages, which may be considered as a purin-free diet, was consumed with the exception of a few meals during the holidays, at which a small amount of meat was taken. No attempt was made to secure a quantitative uniformity of the diet. On the evening preceding the day of an experiment, a light supper was eaten, and no further food was ingested until the completion of the day's experiment, except the substance whose influence on uric acid excretion was to be studied.

Ingestion of purin-free protein food resulted in an increased uric acid output in the fasting subject, which reached its maximum the third and fourth hours after ingestion of the food. No quantitative differences in the action of three types of protein food, cottage cheese, egg white, and gliadin (a wheat protein preparation), in their effect, were observed. Amino-acids also increased uric acid excretion, the maximum effect being produced within two hours after ingestion, more rapidly than in the case of *the proteins*. The effect of the amino-acids is considered to be the result of a stimulation of uric acid production rather than of a more rapid excretion of the uric acid already present in the system, since successive doses of glycocoll on the same experimental day resulted in an *increased elimination* of uric acid in each case. Sarcosin, methyl glycocoll, an amino-acid which does not pass through the same path of catabolism as do the other amino-acids, did not influence uric acid excretion. Ammonium chlorid and urea, products of deaminization of the amino-acids, were also without effect on endogenous uric acid excretion.

Since the secretory activity of the digestive tract is not stimulated by amino-acids, it is believed that the experiments as a whole speak aganst the hypothesis of Mares that the secretory activity of the alimentary glands is mainly responsible for the increased uric acid excretion observed after protein ingestion. It is suggested that the effect is to be considered rather as one due to a general stimulation of all cellular metabolism by amino-acids, the products of the digestion of protein.

36. **Phosphates in Blood.**—On the basis of the results reported by Bloor, phosphoric acid compounds found in human blood may be divided into two classes: (1) the acid soluble—soluble in dilute acids and precipitated with the proteins by alcohol-ether—and (2) the lipoid-phosphoric acid compounds—soluble in alcohol-ether and precipitated with the proteins by dilute acids. The two groups are apparently sharply defined and since, in general, their sum is equal to the total phosphates, the presence of other forms of phosphoric acid combination in blood in significant amounts is doubtful.

42. **Phenols in Blood.**—Phenols have been determined by Theis and Benedict in eighty-three specimens of blood, covering a variety of conditions. Although thirteen different conditions are represented, little difference *in* the phenol value can be detected and that value bears no relation to the amount of uric acid present. Three hernia cases averaged *rather* higher than the others, which perhaps is due to increased intestinal putrefaction. A polycythemia case had been *treated* with benzene for some time, but the phenol was not increased. Ten cases of sarcomas averaged higher than the others.

44. **Antiscorbutic Property of Vegetables.**—To *determine* whether drying at various temperatures, or first cooking and then drying vegetables, destroys the antiscorbutic properties of these foods, Givens and Cohen conducted experiments on guinea-pigs with cabbage and later with potatoes. A small daily addition of raw cabbage to a scurvy-producing diet was found to prevent scurvy in the guinea-pig. Cabbage dried in a blast of air at 40 to 52 C. retained some of its antiscorbutic value in that it would considerably delay the onset of scorbutic symptoms, thereby prolonging life. Furthermore, it could be employed as a dietotherapeutic agent if the signs of scurvy were recognized early enough. Low dried cabbage will prevent scurvy in the guinea-pig and initiate recovery from scorbutic symptoms, provided that the animal will consume a diet supplement of 1 gm. daily. Cabbage heated in an oven for two hours at 75 to 80 C., then dried at 65 to 70 C. for several days lost its antiscorbutic power. Cabbage cooked for thirty minutes, then subjected to drying for two days at 65 to 70 C. exhibited no potency as an antiscorbutic. Potatoes cooked and dried for two days at 65 to 70 C., in the amounts used, possessed no antiscorbutic value. These experiments also indicate that roughage is not the determining factor in the course of scurvy in guinea-pigs. They also confirm the work of Cohen and Mendel in indicating that the antiscorbutic property is not identical with the so-called fat-soluble and water soluble dietary essentials at present recognized.

45. **Colorimetric Estimation of Cholesterol and Coprosterol.** A method is described by Myers and Wardell for the colorimetric estimation of cholesterol in blood, in which the cholesterol is directly extracted from the blood with the solvent (chloroform) employed in the development of the color reaction, thus rendering the estimation very simple. A modification of the method is described whereby it is possible to determine the coprosterol (?) of the feces.

46. **Uric Acid in Blood.**—An experimental study of a number of metallic salts as precipitants for uric acid in a solution alkaline with sodium carbonate was made by Curtman and Lehrman. The results showed that nickel is the best of those tried. A 0.0004 N iodin solution was found suitable for the estimation of small amounts of uric acid provided certain conditions are adhered to. Based on these considerations, a new method has been developed by the authors for the determination of uric acid in blood, the chief features of which are: (*a*) The precipitation of the uric acid by means of nickel aceetate in a solution alkaline with sodium carbonate. (*b*) The estimation of uric acid in the precipitate by means of a dilute solution of iodin. The method was applied with good results to aqueous solutions of uric acid as well as to blood serum to which known amounts of uric acid were added. Low and inconsistent results were obtained when the method was applied to sheep's blood to which known amounts of uric acid were added. This was shown to be due to the inadequacy of the procedure generally employed for the coagulation and preliminary treatment of the blood. The colorimetric method when used in the analysis of samples of the same blood also gave low and inconsistent results for the same reason. Comparison tests show that the volumetric method is fully as accurate as the colorimetric method, and possesses the advantage of requiring no special apparatus.

47. **Nutritive Value of Banana.**—Sugiura and Benedict present a study of the nutritive value of bananas as determined by the maintenance and growth of albino rats when placed on a diet of bananas, or bananas together with certain supplementary substances. It was found that the banana is deficient in (*a*) protein and (*b*) the water-soluble accessory as a foodstuff for the growth or maintenance of albino rats. A diet of bananas, purified casein, and yeast or carrot-extract is sufficient for the perfect growth and reproduction of the albino rat. Such a diet is not, however, adequate for the production of proper milk by the mother. This statement holds true whether the litter of young is large or small in number, showing that the failure in milk is qualitative in nature, and not simply a deficiency in the quantity of milk product. It is interesting to observe that a diet can be adequate for the production of young and for growth after the eyes of the young open, but inadequate for the proper production of milk. Purified casein supplements the banana other than by the simple addition of protein. The casein in the ration cannot be satisfactorily replaced by washed and dialyzed beef.

48. **Antipolyneuritic Substances in Carrots and Yeast.**—Sugiura's experimental results show that the extracts of fresh carrots and crystalline substances from yeast preparation may cure polyneuritis in pigeons in those cases in which the disease has developed quickly; namely, in about twenty days. However, these same substances did not prevent the polyneuritic pigeons from death, if the symptoms appeared more slowly.

49. **Dietary Properties of Potato.**—The results of studies made by the authors show that the dietary properties of the potato closely resemble those of the cereal grains. In this tuber the first limiting factor for growth is the relative shortage of the elements, calcium, sodium and chlorin, as has been found to be the case with the seeds thus far examined. The content of fat-soluble A is too low for the promotion of nutrition at the optimum, and the biologic value of the nitrogen which it yields seems to be of the same order as that of the cereal grains. The results on the value of the potato nitrogen for growth place it in a very different light from those reported by other investigators who have observed its value for the maintenance of nitrogen equilibrium in the adult.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

September, 1918, **12**, No. 2

52 *Primary Depression and Secondary Rise in Blood Pressure Caused by Epinephrin. H. McGuigan and E. G. Hyatt, Urbana, Ill. —p. 59.
53 Effects of Various Agents on Superficial Hemorrhage and Efficiency of Local Hemostatics. P. J. Hanzlik, Cleveland. —p. 71.
54 Effects of Various Systemic Agents on Superficial Hemorrhage. P. J. Hanzlik, Cleveland.—p. 119.

52. **Depression and Rise in Blood Pressure Due to Epinephrin.**—In most dogs, especially mature animals in good health, the intravenous administration of adequate doses of epinephrin (0.5 to 1 c.c. of 1:10,000), after a quick rise in the blood pressure is followed by a rapid fall and a secondary rise. Various hypotheses were investigated by McGuigan and Hyatt. The cause of the secondary rise is apparently due to a central action of the epinephrin acting through the sympathetic ganglions. The basis for this belief is that the removal of the head or pithing of the brain prevents the occurrence of the phenomenon. Also paralysis of the ganglions with nicotin prevents it. It occurs after the sectioning of the vagi and the administration of atropin or pilocarpin. The vagus apparently is not involved in the mechanism. Artificial intracranial pressure during the administration of the epinephrin will cause similar changes in the blood pressure.

Journal of Urology, Baltimore

August, 1918, **2**, No. 4

55 *Acriflavine in Treatment of Gonorrhea. E. G. Davis and B. E. Harrell, Baltimore.—p. 257.
56 *Urinary Antisepsis—Secretion of Antiseptic Urine Following Intravenous Administration of Organomercury Phthalein Derivative. E. G. Davis, E. C. White and R. Rosen, Baltimore. —p. 277.
57 *Id.: Secretion of Antiseptic Urine Following Intravenous Administration of Acriflavine and Proflavine—Preliminary Report. E. G. Davis and E. C. White, Baltimore.—p. 299.
58 *Id.: Antiseptic Properties of Normal Dog Urine. E. G. Davis and R. F. Hain, Baltimore.—p. 309.
59 *Surgical Treatment of Gonorrheal Epididymitis. M. E. Blahd, Cleveland.—p. 321.
60 Calculus Impacted in Vesical Diverticulum Removed by High Frequency Cauterization. H. W. E. Walther, New Orleans. —p. 325.
61 Classification of Disturbances of Sphincteric Control Resulting from Wounds and Contusions of Lumbosacral Region (With and Without External Wound). F. Cathelin.—p. 329.

55. **Acriflavine in Treatment of Gonorrhea.**—Davis and Harrell made an experimental and a clinical study of various diffusible antiseptics. Acriflavine was found to inhibit the development of the gonococcus in protein-containing mediums in a dilution of 1:300,000. (Has 600 times the strength of protargol.) It will penetrate through the submucosa of the

urethra and bladder. It is nontoxic and only slightly irritating to the urethral mucous membranes. The average duration of a gonorrhea under this treatment is distinctly less than with the usual methods. In an occasional case it seems without effect on the course of the disease. The authors have used dilutions varying from 1:2,000 to 1:1,100, and have found the 1:1,000 most satisfactory; it is just as efficient as the more concentrated solutions and the smarting is less, in fact, with this strength it is almost negligible. There have been no complications following the use of a 1:1,000 solution.

In the anterior cases, about 3 c.c. of a 1:1,000 solution were injected into the anterior urethra the patient retaining it for five minutes. In the posterior cases 15 to 30 c.c. were injected through into the bladder, distending the urethra and having the patient retain the dye in the urethra for five minutes and in the bladder till the next voiding. Injections should be given twice a day until all organisms have disappeared from the discharge and then once a day until the patient is considered well. All results were controlled by daily examination of smears from the urethral discharge and of the urine voided in three glasses. Recurrences were noted as is the rule with any form of treatment. A striking feature of this form of therapy appeared to be that in many cases the dye acts almost as a specific, while in an occasionaal one it seems without any effect whatever.

56. **Urinary Antiseptic Value of Chlormercury Fluorescein.**—This paper is a discussion of the chemistry, antiseptic properties, toxicity and excretion of chlormercury fluorescein, a synthetic compound which, administered intravenously in minute doses, will cause the secretion of antiseptic urine, for a definite period of time, without injury to the animal. Chlormercury fluorescein is formed by the introduction of one atom of mercury into the fluorescein molecule. It is more effective in acid than in alkaline urine, in the case of both the colon bacillus and the staphylococcus. Even in alkaline urine, however, the development of both organisms was inhibited by a diluton of 1:10,000. (Phenol, in urine, permits a growth of the colon bacillus in a concentration of 1:1,000.) It is excreted by the kidney after intravenous injection as rapidly as is phenolsulphonephthalein. Nearly all of the dye is excreted by the normal kidney a short time after injection but this excreton is accompanied by a cleavage in the organism into fluorescein and some form of mercury combination. The lack of toxic effects either immediate or cumulative after large and repeated doses makes it probable that the mercury may find its exit in the feces. No clinical value is yet claimed for this drug.

57. **Urinary Antisepsis with Acriflavine and Proflavine.**—Preliminary experiments made by Davis and White indicate that acriflavine and proflavine may prove of value for internal use in alkaline infections of the urinary tract. Chlormercury fluorescein is relatively more efficient in acid urine.

58. **Antiseptic Properties of Normal Dog Urine.**—According to Davis and Hain normal dog urine, obtained by aseptic catheterization, shows a distinct antiseptic action, which is particularly marked against organisms of the colon typhoid group, less effective against *Staphylococcus aureus,* and entirely inert against at least one strain of *Staphylococcus albus.* This antiseptic action is not constant for all dogs, nor for the same dogs on all occasions. It was exhibited, however, by the urine of one dog in twenty-nine out of thirty catheterizations.

59. **Surgical Treatment of Gonorrheal Epididymitis.**—The operation recommended by Blahd consists simply in making an incision about one-half inch in length through the scrotal wall and tunica vaginalis, immediately over the most swollen area of the epididymis, and permitting the serous or purulent exudate to escape. If the fluid which escapes is serous in character, as is prevalent in the vast majority of cases, the incision is closed with one silkworm gut suture, one or two strands of catgut being left for drainage. The latter is generally removed after twenty-four hours. If pus is present the incision is packed with a small strip of plain gauze and the wound allowed to granulate. Either a local anesthestic or gas is used. It is said that immediate relief is obtained from this simple procedure, and the patent is able to resume his duties in a few days and shortly thereafter to submit to treatment for his urethritis.

Missouri State Medical Association Journal, St. Louis

October, 1918, **15,** No. 10

62 *Passing of Curet or Conservative Treatment of Abortion. G. C. Mosher, Kansas City.—p. 347.
63 *Sterility Due to Retrodisplacement of Uterus; Nonoperative and Operative Treatment. E. L. Dorsett, St. Louis.—p. 350.
64 *Vaginal Drainage in Pelvic Cases. F. Hinchey, St. Louis.—p .356.
65 Summer Diarrhea of Infants. J. Zahorsky, St. Louis.—p. 358.
66 Unna's Dressing in Treatment of Leg Ulcers. H. E. Happel, St. Louis.—p. 360.

62, 63, 64. Abstracted in The Journal, June 15, 1918, pp. 1888 and 1889.

Modern Hospital, Chicago

October, 1918, **11,** No. 4

67 Edward L. Trudeau Institution in France. W. C. White, France.—p. 247.
68 Hospital of Extended Grace to Women and Children. R. S. Hall, Seoul, Korea.—p. 252.
69 How America May Help Belgium After the War. R. Sand.—p. 256.
70 Canadian Civil Hospital's Part in War Work. M. T. MacEachern. Vancouver, B. C.—p. 257.
71 Efficiency System for Medical Work of State Hospitals. H. D. Singer, Hospital.—p. 260.
72 Community Hospital the Outgrowth of Popular Demand. J. M. Dodd, Ashland, Wis.—p. 264.
73 Hospital Accounting. C. A. Porter and H. K. Carter.—p. 266.
74 Department of Laboratories. M. Kahn, New York.—p. 271.
75 Volunteer Medical Service Corps. F. Martin.—p. 275.
76 War Program of Vital Importance. F. F. Simpson.—p. 278.
77 War Time Hospitals Present Ideal Conditions for Investigation. T. J. van der Bent, New York.—p. 279.
78 Little Journeys to Places and People Worth Knowing. M. J. Robinson.—p. 281.
79 Obstetrics and the Hospital. C. E. Paddock, Chicago.—p. 29.
80 Hospital—Past, Present and Future. A. S. Monro, Vancouver, B. C.—p. 292.

Nebraska State Medical Journal, Norfolk

October, 1918, **3,** No. 10

81 Differential Diagnosis Between Benign and Malignant Tumors of Female Breast. J. E. Summers, Omaha.—p. 297.
82 Sinusitis and Conservative Treatment for Selected Cases. S. G. 'Zemer, Lincoln.—p. 301.
83 Granuloma Pyogenicum; Report of Two Cases. M. G. Wohl, Omaha.—p. 304.

New Jersey Medical Society Journal, Orange

October, 1918, **15,** No. 10

84 Hospital Standards. J. M. Baldy, Philadelphia.—p. 337.
85 Simple Operation for Double Inguinal Hernia; One Incision. D. T. Winter, Jr., Jersey City.—p. 340.
86 Pneumococcal Infections of Eye. T. R. Paganelli, Hoboken.—p. 341.
87 Indol Amblyopia. T. R. Paganelli, Hoboken.—p. 342.

Ohio State Medical Journal, Columbus

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88 Head Injuries. C. M. Harpster, Toledo, and Others.—p. 580.
89 Institutional Supervision. A. F. Shepherd, Dayton.—p. 584.
90 Consideration of Etiology and Treatment of Pernicious Anemia. G. L. Lambright, Cleveland.—p. 585.
91 Why Is the General Practitioner. J. W. Clemmer, Columbus.—p. 588.

Oklahoma State Medical Association Journal, Muskogee

October, 1918, **11,** No. 10

92 Complete Avulsion of Arm and Scapula; Recovery. G. A. Wall, Tulsa.—p. 315.
93 Modern Treatment of Burns. F. S. Clinton, Tulsa.—p. 320.
94 Diagnosis of Stone in Kidney and Ureter. J. H. White, Muskogee.—p. 323.
95 Chronic Pus Foci—Common Location. W. H. Livermore, Chickasha.—p. 326.
96 Surgery of Accidents. J. C. Williams, Picher.—p. 327.
97 Knife Swallowing; Report of Case. D. F. Stough, Geary.—p. 331.

Southern Medical Journal, Birmingham, Ala.

October, 1918, **11,** No. 10

98 Malaria Question and Farmer. A. J. Ochsner, Chicago.—p. 661.
99 Incidence and Importance of Pleurisy in Early Tuberculosis. P. P. McCain, Santorium, N. C.—p. 663.
100 Fulguration and Roentgenotherapy in Malignancy. J. H. Edmonson, Birmingham.—p. 665.
101 Treatment of Skin Diseases with Kromayer Lamp: Phototherapy. C. A. Simpson, Newport, R. I.—p. 669.
102 Different Phases of Work to be Done in Whole Time County Health Officer and County Organizer. G. G. Altman, Helena, Ark.—p. 675.

103 *Health Education in Rural Districts. L. A. Riser, Columbia, S. C.—p. 678.
104 Clinical Data on Goiter. E. G. Jones, Atlanta, Ga.—p. 682.
105 Unique Case of Prostatic Abscess. G. F. Lydston, Chicago. —p. 685.
106 *Treatment of Acute Diffuse Peritonitis. H. A. Gamble, Greenville, Miss.—p. 686.
107 What Local Surgeon Can Do in First Aid Work. J. A. Mitchell, Tullahoma, Tenn.—p. 688.
108 Treatment of Shock with or without Hemorrhage. T. D. Frizzell, Quanah, Texas.—p. 694.
109 Traumatic Intra-Ocular Hemorrhage. W. G. Harrison, Birmingham.—p. 696.
110 Woody Phlegmon of Neck (Reclus): Report of Two Cases. T. C. Worthington, Baltimore.—p. 699.
111 Pneumococcus Infection of Eye, Ear, Nose and Throat. L. D. Brose, Evansville, Ind.—p. 701.
112 Advantages of Tour of Duty in Medical Officers' Training Camp. I. W. Cooper, Camp Shelby, Miss.—p. 705.
113 Efficiency in Medical Teaching. W. D. Cutter, Augusta, Ga. —p. 706.

103. Abstracted in The Journal, Dec. 22, 1917, p. 2143.
106. Abstracted in The Journal, Dec. 15, 1917, p. 2066.

Southwest Journal of Medicine and Surgery, El Reno, Okla.

October, 1918, **26**, No. 10

114 Two Cases of Dual Personality in Inbred Migraines. S. G. Burnett, Kansas City, Mo.—p. 217.

Wisconsin Medical Journal, Milwaukee

October, 1918, **17**, No. 5

115 Mental Deficiency. J. F. McFadden, Jefferson Barracks, Mo. —p. 178.
116 Ubiquitous Anacrobe. W. E. Bannen and A. A. Skemp, La Crosse.—p. 180.
117 Beck's Bismuth Paste in Treatment of Cervicitis, Endocervicitis and Endometritis. A. R. Hollender, Linden.—p. 181.
118 Traumatism Factor in Etiology of Pancreatic Cysts. R. W. Jones, Wausau.—p. 183.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Oct. 5, 1918, **2**, No. 3014

1 State and Prenatal Hygiene. E. McConnell.—p. 365.
2 Exercise Blood Pressure Test of Myocardial Efficiency. G. Lambert.—p. 366.
3 *Pulmonary Fat Embolism and Its Relation to Traumatic Shock. G. E. Sutton.—p. 368.
4 Surgical Cure of Uterine Prolapse. H. P. Costobadie.—p. 370.
5 *Method for Immediate Treatment of Fracture of Femur on Battlefield at Site of Casualty. F. B. Chavasse.—p. 373.
6 Splint for Fractured Shaft of Femur. H. E. Griffiths.—p. 374.
7 Acidosis and Hydrogen-Ion Concentration. W. M. Bayliss.—p. 375.

3. **Pulmonary Fat Embolism and Traumatic Shock.**—Examination of a considerable number of battle casualties which have terminated fatally at a casualty clearing station has led Sutton to the conclusion that 10 per cent. have pulmonary fat emboli demonstrable by gross methods. He is convinced that this percentage would be increased if sections of lung tissue were stained for fat in all cases. Fat emboli have been found in cases of fractures, wounds involving fatty tissue and wounds penetrating the abdomen, with laceration of the liver. Sutton has particularly noticed that in compound fractures reaching a casualty clearing station with splints imperfectly applied, and where, consequently, immobility was not complete, symptoms, resembling "shock" were invariably present. He has seen pulmonary fat embolism more often following a compound fracture without comminution than with comminution. During a recent crisis, when patients had to be evacuated to casualty clearing stations more hurriedly than in ordinary times a number of cases were received, many in a profound state of "shock." The blood loss in some was not great, as evidenced by the condition of their clothing and stretchers. Among these, few showed any response to resuscitation measures.

In this series Sutton examined the lung tissue in eight cases, and found pulmonary fat embolism in six. Sutton does not claim that all fatal cases of shock are due to pulmonary fat embolism, because the physical and chemical properties of lipemic blood are such that acidosis cannot be avoided, and it is still to be proved whether the terminal mechanism is not the same. The occurrence of pulmonary fat embolism in the war area is much more frequent than has been suspected, owing, probably, to lack of thorough examination of lung tissue for evidence of fat. Associated with pulmonary fat embolism, disseminated fat is found in the other tissues of the body, included in the capillaries. This undoubtedly accounts for the delirium so frequently associated with this condition.

Prophylactic treatment consists in fixation of fractures with extension where possible; early and efficient surgical interference for fractures; at operation on wounds involving fatty tissue it is imperative to secure careful and complete hemostasis, particularly the ligation of the nonbleeding proximal ends of veins as well as the bleeding distal ends. Active treatment is only symptomatic. Small amounts of sodium bicarbonate (2 per cent.) are helpful. The administration should be regulated by the condition of the right heart. Transfusion of blood in small amounts may be useful.

5. **Immediate Treatment of Fractured Femur.**—The principle of the method proposed by Chavasse is the application of very powerful extention, followed by fixation in the extended position. A stretcher and two slings are required. It is the rule for each of the four bearers in a squad of regimental stretcher bearers to carry a sling. Thus two slings are still available for carrying the stretcher (should this method of carying be possible or desirable). If there are no slings, puttees can be used. Spare slings should be available at aid posts.

The procedure is as follows: Expose and dress the wound. Enlarge the adjustable loop of one sling to its maximum by shifting the grip plate as far as it will go. Slip the loop over the foot on the injured side and pass it up as far as the groin. Tie the ankles and knees firmly together (with narrow fold triangular bandages, or other bandages or makeshifts). Open the stretcher and place on it a small pillow where the knees will be. (A waterproof sheet, doubled from side to side and loosely rolled from end to end makes a suitable pillow). Place the patient on the stretcher so that his heels project an inch or two beyond the edge of the canvas, or more if he is a tall man. The heel on the injured side should be a little lower than the other if possible. Adjust the loop of the other sling so that it is equal in length to the distance between the poles of the stretcher (1 foot, 7 inches). Slip it over one handle and wind very tightly about the feet. That is to say, pass it from one handle across the soles of both feet, up across both insteps, behind both ankles, down across both insteps, then through the loop (to avoid torsion of the feet), and thence across the soles of both feet to the opposite pole. Secure by buckling the small strap around the opposite handle, making all as taut as possible. To avoid the small strap tearing away owing to the strain, the small loop to which it is sewn should be turned inside out, thus causing the strap to pass actually through the small loop.

Gently raise the stretcher almost into the perpendicular, so that the patient is hanging by his feet. Draw the patient down head first far as he will come. (If the patient continues to have pain he may be left for a few minutes until the muscles are tired. He may then be drawn down a little farther.) The stretcher may be propped up against something. See that the back of the loop is well behind the buttock. Adjust the loop so that the grip plate will almost lie on the surface of the stretcher when the strain is taken. (This position of the grip plate tends to correct the flexion abduction and external rotation of the upper fragment.) Put a very heavy strain on the groin sling and secure by buckling the small strap around the pole handle by the head in such a way that it does not rotate and slip. While making fast the strong pull must be kept up in order that everything shall be taut after making fast. (There is no possibility of the groin loop constricting the femoral vessels, as in the rifle splint and a badly applied long Liston. For the sling loop is so oblique that it does not cross these vessels at all.) Level the stretcher. Tie a bandage round pelvis and stretcher.

Lay a rifle, bolt removed, along the outside of the limb to steady it. Bandage it in position. The patient is now ready for his journey.

British Medical Journal, London

Oct. 12, 1918, **2**. No. 3015

8 Renal Dropsy. T. C. Allbutt.—p. 395.
9 Acute Ulcerative Gingivitis. C. G. Colyer.—p. 396.
10 Amino-Acid Content of Nutrient Media. I. W. Hall.—p. 398.
11 Analysts of Causes of Breakdown in Flying: Nervous Mechanism of Flying Man. N. S. Gilchrist.—p. 401.
12 Some Aspects of Maxillary Antrum Disease. W. B. Brownlie. —p. 403.
13 Intravenous Saline in Blackwater Fever. A. Patrick.—p. 404.
14 Two Cases of Artificial Pneumothorax. C. G. R. Goodwin and F. C. Coley.—p. 405.
15 Filariasis among Australian Troops. R. Rimer.—p. 405.

Journal of Tropical Medicine and Hygiene, London

Oct. 1, 1918, **21**. No. 19

16 Minor Cutaneous Affections Seen in Anglo-Egyptian Sudan. A. J. Chalmers and A. Marshall.—p. 197.

Lancet, London

Oct. 5, 1918, **2**. No. 4962

17 *Sensory Changes in Diagnosis of Trench Fever. D. W. C. Jones. —p. 443.
18 Pathologic Diagnosis in Gunshot Injuries of Peripheral Nerves. J. S. B. Stopford.—p. 445.
19 Macroscopic and Microscopic Methods of Diagnosing Amebic and Bacillary Dysentery. J. G. Thomson and L. F. Hirst.—p. 448.
20 Types of Dysentery Bacilli Isolated. J. G. Thomson and L. F. Hirst.—p. 449.
21 Amebic Dysentery. J. G. Thomson.—p. 451.
22 Fractures of Femur: Calliper as Instrument of Extension. P. L. W. Williams.—p. 452.
23 Ether Anesthesia for Face and Jaw Surgery. J. C. Clayton.—p. 454.
24 *Transfusion of Blood in War Surgery: New Modified Direct Method. S. R. Harrison.—p. 455.
25 Abnormal Conditions of Enamel in Cases of Malnutrition. J. L. Dick.—p. 456.
26 Angina Pectoris: Changes in Electrocardiogram During Paroxysm. G. Bousfield.—p. 457.

17. **Sensory Changes in Trench Fever.**—Among the patients examined by Jones were about 130 cases of "fever" of various kinds, including trench fever, malaria, cerebrospinal meningitis, scarlet fever, measles, rose measles, mumps, diphtheria and surgical septicemia. Of these, trench fever and malaria were commonly associated with hyperalgesia of three definite groups of segments which do not correspond with those belonging to any viscera. In no other fever was anything of this kind found; cases in which there were clear symptoms or physical signs pointing to inflammation of any viscus often showed hyperalgesia over the appropriate segments, but that was all. The parotitis of mumps, the bronchitis of measles and the nephritis of scarlet fever all showed typical areas, and throughout the fevers, in cases of severity, the eleventh dorsal area, corresponding to the kidney, was often hypersensitive, and when this was so, albumin was nearly always to be found in the urine; this is especially true of surgical septicemia. The inference is that the kidney suffers damage in the process of eliminating bacteria and their toxins. But hyperalgesic areas of unexplained origin were found only in trench fever and malaria.

In these fevers the following were found: the eighth cervical and first dorsal, the seventh dorsal, and the first, second, third, forth and fifth lumbar. This is the full trench fever distribution, and is found frequently in its entirety, and in nearly every case which is diagnosed as trench fever on clinical grounds this distribution is to be found more or less complete.

In this series seventy-three cases of trench fever were examined. The segmental areas of hyperalgesia found were as follows:

Upper Group—		
8 C., 1 D	29	39
1 D. (alone)	10	
Middle Group—		
7 D. (alone)	55	68
7 D. + adjacent areas	13	
Lower Group—		
1, 2, 3, 4, 5, L.	57	67
Incomplete lumbar	10	
"Full Trench Fever"—		
8 C., 1 D.; 7 D.; 1, 2, 3, 4, 5 L.		24
Nil		5

Eighteen cases of malaria were examined, of which sixteen showed precisely similar areas to those found in trench fever. In no other fever was this the case. It is suggested, by Jones that hyperalgesia of these particular segments is diagnostic of a group of diseases consisting of malaria and trench fever, and it is remarkable that one of them is mosquito-borne and the other louse-borne; that both appear to be protozoal, with a definite cycle of development, as shown by the periodicity of the febrile attacks induced by them; that both appear to lie dormant for considerable periods within the body; and that both are associated with enlargement of the spleen. These hyperalgesiae are precisely similar to those found in inflammation of the viscera, but it is difficult to see to what viscera they can correspond, though a few possibilities suggest themselves. The eighth cervical and first dorsal areas, perhaps, indicate an affection of the thyroid; a case of acute thyroiditis examined showed some hyperalgesia of the first dorsal. The seventh dorsal area may possibly indicate the spleen, which is enlarged in both the diseases concerned, or else the suprarenal gland, since there is evidence of increased excitability of the sympathetic in trench fever. Also the physiologic association between thyroid and suprarenal should be borne in mind.

The cause of hyperalgesia of the lumbar segments is quite obscure; it does not appear to be any condition of the small intestine, kidney, testis or large intestine, and it is difficult to see what remains. In the only two cases of cystitis examined some lumbar segments were found involved, in one of them the first three, but the absence of symptoms pointing to any vesical disturbance makes such a view difficult to accept; at present it must be said that the significance of a lumbar hyperalgesia in these diseases is unexplained.

24. **Transfusion of Blood in War Surgery.**—The indications for transfusion of blood in war surgery according to Harrison are: (1) anemia, caused by (*a*) loss of blood, (*b*) prolonged sepsis; (2) retarded healing of wounds, including compound fractures. In primary hemorrhage, with suitable conditions and suitable blood, it is always beneficial. In secondary hemorrhage and sepsis transfusion causes increase in volume and constituents of the blood; increase of coagulability of blood, which often stops the capillary oozing so frequently found in septic cases; increased healing, appetite, and well being of patient; lowering of pulse rate and temperature; loss of edema and albuminuria. If the transfusion is not carried out with "technique de rigueur," and an efficient agglutination test has not been carried out, certain alarming or even fatal results may take place. Immediate: hemolysis, agglutination, possibly causing sudden death; cyanosis, with feeble pulse, possibly caused by giving too large a volume of blood when the heart muscle is degenerated from sepsis. Later: sweating, rigors, pyrexia, apparently found more frequently after giving citrated blood; hematuria.

Practitioner, London

October, 1918, **101**, No. 4

27 *Fractures in Warfare. A. Lane.—p. 181.
28 Medical Notes. T. Horder.—p. 191. To be continued.
29 Recent Progresss in Gynecology. F. McCann.—p. 194.
30 Review of Tropical Diseases. R. T. Hewlett.—p. 200.
31 Administration of Concentrated Intravenous Injections of Novarsphenamin (Novarsenobenzol) in Treatment of Syphilis. S. E. Dore.—p. 209.
32 *Intravenous Injections of Arsenious and Mercuric Iodids in Syphilis and Yaws. R. L. Spittel.—p. 212.
33 *Technic of Large Intravenous Injections. C. H. Whiteford.—p. 216.
34 Scurvy. H. V. O'Shea.—p. 217.
35 Breaking of Vicious Circles by Surgery. J. B. Hurry.—p. 225.

27. See Abstract No. 15, The Journal, Feb. 16, 1918, p. 491. Also published the *Lancet*, London, Jan. 5, 1918, p. 4.

32. **Iodids in Syphilis and Yaws.**—In the past three and a half years Spittel has given over 5,000 injections of a modification of Donovan's solution in syphilis and yaws. In an emergency, a very efficient injection may be made out of ordinary Donovan's solution, diluted with an equal quantity of strained sterile water; it is then rendered slightly alkaline by adding drops of a 15 per cent. solution of sodium hydroxid while testing with litmus paper. The dose of this is from 7 to 12 c.c. for intravenous administration. Its disadvantage

is that it contains too much mercuric iodid, and is apt to cause much salivation if not cautiously used. The solution Spittel uses as a routine is as follows: mercuric iodid, 50 grains (3.24 gm.); arsenious iodid, 40 grains (2.59 gm.); sodium (or potassium) iodid, 8 drams (28.42 c.c.); distilled water, 40 ounces (1,000 c.c.). The dose for an adult is 8 to 15 c.c., small to begin with and gradually increased according to tolerance. Four to six injections at intervals of four days to a week constitute a course. Several such courses should be given, with intervals of a month or six weeks between them.

The injection is administered with a 20 or 30 c.c. glass syringe, into which the required quantity of solution is drawn; the syringe is then filled up to its full capacity with sterile water. This further dilution is necessary to obviate the slight phlebitis that is otherwise apt to ensue rendering future injections into the same vein somewhat difficult. The solution is introduced into the vein after the usual manner of intravenous injections; should any of it escape into the tissues outside the vein, pain, tenderness and induration are caused. The reaction depends on the dosage employed; it is negligible and evanescent if the dose is graded to tolerance. Heart and kidney disease are no contraindication to cautious dosage.

One or more of the following symptoms may be produced within a few hours of injection: chill, fever, malaise, headache, vomiting, pains and a burning sensation in the body. Later effects are gingivitis and salivation, coryza, lacrimation, diarrhea and griping.

33. **Technic of Large Intravenous Injections.**—Whiteford injects the solution into the vein by means of a Higginson enema syringe. The apparatus required includes a Higginson syringe, to which is attached 1 foot of stout walled rubber tubing, with a lumen of one-eighth inch. At the end of this tubing is a metal cannula with a bulbous point. All injunctions are secured with stout silk, tightly tied. The solution is contained in an enamelled iron jug, the mouth of which is 5 to 6 inches in diameter. A piece of tape, or stout silk, is attached to the syringe, just beyond the bulb, and its ends tied to the handle of the jug, in order to prevent the syringe from slipping out of the jug. The vein is exposed, the syringe, tubing, and cannula are filled with solution by a few squeezes of the bulb and the cannula is tied into the vein. The force required to make the solution pass through the lumen of the actively contracted vein of a shocked patient is considerable and is worthy of notice by those who contend that in shock the veins are in a state of dilatation. As soon as the cannula has been tied into the vein only one pair of hands is required to attend to the injection.

Bulletin de l'Académie de Médecine, Paris

Sept. 10, 1918, **80**, No. 36

36 *Cardiovascular Disturbances in Aviators. D. Berthier.—p. 232.
37 Streptococcus Responsible for Complications of Influenza. Le Marc'hadour and Denier.—p. 233.
38 Influenza. Antoine and Orticoni.—p. 235.

36. **Cardiovascular Disturbances in Aviators.**—Berthier found the liver extremely congested in one aviator and also, accompanied by organic lesions, in a second. Both the young men had been taken with vertigo and had lost consciousness on reaching a high altitude. The heart seemed sound on superficial examination, but the blood pressure was very low and, in the morning, in bed, the pulse was weak and slow. He urges the necessity for systematic testing of the blood pressure of aviators with the Pachon oscillometer, as this records the minimal pressure. Any tendency to liver disturbance and nervous upset is liable to affect the circulation dangerously, when the blood pressure is too low. He is convinced that the aviator himself, and not the stalling of his engine, is often responsible for the fatal accidents.

Bulletin de la Société Médicale des Hôpitaux, Paris

June 21, 1918, **42**, No. 22

39 *Incontinence of the Pylorus. G. Hayem.—p. 623.
40 *Acute Mikulicz' Disease. E. de Massary and Tockmann.—p. 627.
41 *Progressive Myopathy. C. Achard and L. Binet.—p. 630.
42 *Acute Nephritis with Gangrene. R. Nuñez.—p. 635.
43 *Emetin in Bilharziasis. A. Lemierre and P. Lantuéjoul.—p. 640.
44 Multiple Deformities. L. Babonneix and H. David.—p. 643.
45 *Fate of Bone Graft in Skull. Sicard and others.—p. 648.
46 Pernicious Anemia or Leukemia? Nobécourt and others.—p. 650.
47 Influence of Age on Frequency of Contagious Diseases among the Troops. P. Nobécourt.—p. 655.
48 *Albumin and Blood in Stools. M. Labbé and G. Canat.—p. 659.
49 *Early Diagnosis of Tuberculosis. Sakorrafos.—p. 661.
50 Syphilitic Hyperostosis. Sakorrafos.—p. 662.

39. **Incontinence of the Pylorus.**—Hayem refers to an article recently summarized in The Journal, abstract 34, page 1011, saying that what the writers call incontinence of the pylorus is the same disturbance which he described eleven years ago as premature evacuation of the stomach. He said then that the resulting diarrhea is the triumph of kefir treatment. It may benefit likewise when there is constipation instead of diarrhea. Bismuth subnitrate may sometimes prove useful in the same way.

40. **Acute Mikulicz' Disease.**—The parotitis had a sudden onset simulating mumps, but it passed into a chronic phase, and the lacrimal glands shared in the process. The Wassermann reaction is strongly positive.

41. **Progressive Muscular Dystrophy.**—In the case described there was no apparent disturbance in carbohydrate metabolism, no creatin in the urine, and nothing to indicate an endocrine origin. The thyroid and the pituitary body seem to be normal.

42. **Acute Nephritis with Gangrene.**—Seven years after pneumonia with albuminuria of 7 gm. to the liter, acute nephritis developed in the man of 34, with gangrene of the right leg. Several similar cases are on record; in some the gangrene affected all the extremities. The patients were all comparatively young and they speedily succumbed. The gangrene in the majority was of the dry type.

43. **Emetin in Bilharziasis.**—The emetin was injected by the vein, a total of 0.92 gm. in thirteen injections in five weeks. No ova were discovered after the eleventh injection, and there was no further hematuria or pain after the completion of the course during the month the young man was under medical supervision.

45. **Fate of Bone Graft in Skull.**—Sicard is an advocate of utilizing a piece of bone from another skull to close a gap in the skull. The graft is cleared of fat, and is sterilized, and fitted into the breach where it is fastened with catgut. Necropsy ten months after one operation of the kind showed the complete tolerance of the tissues, and that the catgut had sufficed to fasten it securely in place. Each surface of the bone graft had become covered with a dense and extremely resistant fibrous membrane, solidly adherent to the adjoining tissues. Only the inner surface of the bone graft showed slight signs of a tendency to resorption.

48. **Albumin and Blood in the Stools.**—Labbé and Canat found soluble albumin in the stools in about 16 per cent. of 113 cases of chronic gastro-intestinal disease, and acetoprecipitable albumin in about 50 per cent. Blood was found in 5 per cent. Comparison of the findings with the clinical course shows that the presence of acetoprecipitable albumin in the stools is a sign of moderately severe dyspepsia; soluble albumin, of grave dyspepsia. The presence of blood in the stools is also a sign of grave gastro-intestinal disturbance, but not necessarily the same kind of disturbance as in the cases with soluble albumin, although they are frequently associated. The blood comes from some bleeding point in the digestive mucosa, but soluble albumin, they reiterate, points to ulceration.

49. **Early Diagnosis of Tuberculosis.**—Sakorrafos warns that completely healed lesions in the chest, of tuberculous or other origin, may give roentgen findings liable to be mistaken for florid tuberculous lesions. On the other hand, he thinks that tuberculosis may be regarded as certain, although there may be no signs of pulmonary involvement, when the glands in the neck, axilla and inguinal region are hypertrophied and the blood shows pronounced lymphocytosis. It may also be regarded as certain in tall, blonde young men with tachycardia and low blood pressure, high urea and high phosphate content of the urine, the chest long and narrow, with poor expansion, and often a tendency to pityriasis versicolor. Under the influence of the physical stress of active service and unhygienic living, men in this group develop pulmonary tuberculosis. Sakorrafos is professor of clinical medicine at Athens.

Lyon Médical

September, 1918, **127**, No. 9

51 *Infection of Skin. Favre, R. Mathieu and P. Richard.—p. 385.
52 Syphilitic Reinfection in a Diabetic. Molle.—p. 428.

51. **Infection of the Skin.**—Favre, Mathieu and Richard expatiate on the change in the conception of skin diseases which has been brought about by the war. It is becoming realized more and more that persisting dermatoses are maintained by local infection in many cases which have previously been attributed to diatheses, etc. Ill advised treatment may also have contributed its share.

Paris Médical

Aug. 17, 1918, **8**, No. 33

53 *War Fractures of Forearm. E. Destot.—p. 133.
54 Continuous Tachycardia of Emotional Origin. R. Charon and G. Halberstadt.—p. 140.
55 *Local Action of Liver Fat.—E. Savini.—p. 143.
56 *Lip Reading.* H. *Marichelle.*—p. *145.*
57 Locomotor Sequels of War Wounds. A. Mouchet.—p. 145.

53. **Fractures of the Forearm.**—Destot says that surgeons are constantly sinning against four great laws that should govern every case of fracture of the forearm, namely, that the relative length of the two bones must be maintained, as also the natural curve of the radius and its excentric position, and the hand must be kept in supination to maintain the bones in the normal axis. An immediate prosthesis is necessary to guide cicatrization and prepare conditions for a secondary graft. He reiterates that if surgeons could follow their cases of fracture of the forearm to final healing, they would appreciate better the difficulties of correcting parts healed in a vicious attitude, and they would realize what might have been done to avoid this. Especially in the matter of grafts improved technic is desirable. He describes a useful instrument for cutting grafts, etc.

55. **Liver Tissue in Local Treatment of Wounds.**—Savini recalls the statements of Schoull and Weiller that wounds healed more rapidly when treated with lipoids from the liver. This treatment was suggested, he says, by the current observation that the spontaneous appearance of jaundice in the wounded shortens considerably the healing of the wounds. Vigen in 1915 reported excellent effects on the healing of burns and torpid wounds of an ointment composed of lard, wax, olive oil and beef gall. Savini then applied the principle, using an ether extract of chopped liver tissue, desiccated at 70 C., pulverized and placed in a Soxhlet apparatus to extract the lipoids with ether. The lipoids thus derived are emulsified at 5 or 10 per cent. in olive oil. To keep it aseptic a little ether is added from time to time. Before using, it is warmed by setting it in hot water, and is well shaken. He sprinkles the wound with this about every second day, after lavage with saline, and applies a dressing. The results have been very encouraging; he reports some typical cases. He has found it particularly useful in promoting the healing of Thiersch flaps, and of varicose ulcers and suppurating hemorrhoids, of burns from flame and from caustics, and also for lavage of the intestines in local treatment of colitis, and in ulceration of the uterine cervix. No effect was apparent with eczema or syphilitic lesions. The lipoids probably act as general stimulants of the cell functions, activating their defensive power and their capacity for regeneration in a remarkable manner.

Presse Médicale, Paris

Sept. 23, 1918, **26**, No. 53

58 *Treatment of Acute Arthritis. P. Nolf.—p. 485.
59 *Lethargic Encephalitis. P. Sainton.—p. 487.
60 *Secondary Suture. Ehrenpreis.—p. 490.
61 *Quinin and Malaria. G. Pépin.—p. 492.
62 Factitious Skin and Venereal Lesions. R. Burnier.—p. 493.

58. **Treatment of Acute Arthritis.**—Nolf has published several reports on the efficacy of parenteral injections of peptone in treatment of infectious diseases, alone or with other therapeutic measures. He here gives the details of a few cases which seem to show the superior efficacy of association of peptone with the usual sodium salicylate treatment in rebellious cases of acute articular rheumatism, and also in septicemia from the staphylococcus or hemolytic streptococci. He uses 8 or 10 c.c. of a 10 per cent. solution of peptone, with or without 0.5 mg. epinephrin. If there is reason to anticipate much of a reaction, he dilutes it in 150 or 200 c.c. of isotonic saline solution. The intravenous injection is made very slowly, under constant control of the pulse, suspending the injection if the pulse runs up above 35 per quarter minute, and waiting a few moments until the pulse calms down.

59. **Lethargic Encephalitis.**—Sainton analyzes what is known to date in regard to lethargic encephalitis. He is inclined to regard it as the result of the localization in the brain of the prevailing influenza. This is suggested among other things by the coincidence of the two epidemics, both this year and in 1890, by the purulent rhinopharyngitis of both diseases, the similar onset, and the long period of weakness afterward. Lethargic encephalitis has less analogy with poliomyelitis, especially the difference in the age of the patients, the absence of a meningeal reaction, the lesser changes in the nerve cells, and finally the complete, integral recovery.

60. **Indications and Technic for Secondary Reunion of Wounds.**—Ehrenpreis gives six illustrations to demonstrate the preferable technic. The wound must be clinically sterile, flat, and the sutures must be applied without tension, each tier of soft parts sutured separately.

61. **Best Technic for Quinin Administration.**—Pépin urges the importance of watching over the elimination of quinin as a gage for its absorption and therapeutic efficacy, and a guide for the next dose. Twenty-two persons, sick and well, were given an intramuscular injection of 0.8 gm. quinin and the proportion eliminated in the urine was determined at regular intervals. One healthy person eliminated 21 mg. in the second hour urine; 46 mg. the twentieth hour, to a total of 216 mg. in forty-eight hours. Corresponding figures in a malarial subject were 13 and 54 mg. to a total of 158.6 mg. in forty-eight hours and 161.4 mg. in sixty-nine hours. In one case, 0.8 mg. were refound in the urine in thirty minutes. The quinin could also be recovered from the stools. He gives findings also after the quinin had been administered by other technic. He does not give his technic for extraction of the quinin, as it has been already published in the *Bulletin des sciences pharmacologiques,* January-February, 1918, **25**, 19.

Progrès Médical, Paris

Aug. 24, 1918, **33**, No. 34

63 Gastritis as Factor in Dyspepsia. F. Ramond.—p. 289.
64 *State of Shock. W. B. Cannon.—p. 290.
65 *Italian Method for Grafting on Old Wounds. R. Bonneau.—p. 291.
66 Phlebitis from Contusion Alone. Narich.—p. 294.

Aug. 31, 1918, **33**, No. 35

67 *Intravenous Injections of Hexamethylenamin. Loeper and L. Grosdidier.—p. 297.
68 *Pathogenesis of Meningitis. J. Lochelongue.—p. 298.
69 Spinal Anesthesia. H.-P. Achard.—p. 299.
70 *Local Treatment of Anorectal Lesions. A. Bernard.—p. 300.

64. **Shock.**—Cannon is professor of physiology at Harvard, and this article is a summary of an address made at a meeting of the Société médicale franco-américaine at Dijon. Among the points he emphasizes is the necessity for warming up from the very first a man in shock. If hot water bottles are used, one should be placed at the feet and one on the abdomen, covered by the hands, one in each axilla, and one between the thighs. No operation should be attempted until the blood pressure has been raised above the critical level; this seems to be 70 mm., or 80 mm. in case of hemorrhage.

65. **Italian Method of Grafting.**—Bonneau describes the technical points for applying this method to grafting operations on the legs.

67. **Intravenous Injections of Hexamethylenamin.**—A review of practically the same article was published, Oct. 19, 1918, p. 1350.

68. **Pathogenesis of Meningitis.**—Lochelongue says that in his work as chief of a bacteriologic laboratory he has been

impressed by the way in which the presence of sugar and of albumin promotes proliferation of bacteria in culture mediums, and also in the cerebrospinal fluid. Hence he suggests that before any operation on the skull and in general infections the spinal fluid should be tested for sugar. An overhigh sugar content should be regarded as calling for special prophylactic measures. He adds that addition of a little sugar to specimens of fluid being sent in for examination will be more apt to maintain the vitality of the meningococci.

70. **Medication of Anorectal Lesions.**—The *introducteur* is a blunt tube with holes in the side near the tip. The salve placed in it is forced out with a piston. A rubber ring is adjusted on the tube to ensure that it enters the rectum only to the exact depth required. The patient can then continue the treatment himself.

Policlinico, Rome

Sept. 8, 1918, **25**, No. 36

71 *Factors in Pulmonary Tuberculosis. G. Breccia.—p. 845.
72 *Traction on Amputation Stumps. G.-L. Fiori.—p. 850.

Sept. 29, 1918, **25**, No. 39

73 *Influenza. T. Pontano.—p. 917; G. Morelli.—p. 926; C. M. Pavesi.—p. 931; Committee Report.—p. 936.
74 *Bacillus of Influenzal Septicemia. R. Ciauri.—p. 924.

June, 1918, **25**, Surgical Section No. 6

75 *Test Azoturia. E. Pirondini.—p. 161.
76 *Gas Infection of Wounds. V. Calo.—p. 176. Cont'n.

Aug. 15, 1918, **25**, Surgical Section No. 8

77 *Tuberculosis of the Thyroid. G. Giacinto.—p. 225.
78 *Functional Kidney Tests in the Young. E. Pirondini.—p. 230.
79 Abdominal Wounds. G. Egidi.—p. 240. Cont'n.

71. **Cooperating Factors in Tuberculosis.**—Breccia reiterates that the campaign against tuberculosis requires centralization as a government function.

72. **Traction on Soft Parts of Stump.**—When the skin flaps had to be cut too short to cover the stump, Fiori has succeeded in pulling them down by traction with weights hung from a loop formed by two strips of adhesive plaster crossed over the stumps and carried high up on the skin. By shifting the traction to different points of the plaster loop, the skin can be drawn down evenly all around. Healing was complete in thirty-five days in a case described in which the soft parts had been extensively sacrificed on account of gas gangrene.

73. **Influenza.**—Pontano discusses the epidemic from the clinical and other points of view, remarking that not a corner of the country (Italy) seems to have escaped. When several members of a household are attacked, the passage of the germs through others seems to enhance their virulence. The epidemic begins to decline in three or four weeks, and after six weeks no new cases develop. All ages are affected, but the smallest proportion of cases are among the elderly, and the disease is milder in them, suggesting eventual immunization from preceding epidemics. The general mortality from the epidemic has been 2 or 3 per cent. The incubation period does not seem to be more than one or two days. In Pavesi's experience, the epidemic spread by zones, like a cyclone, but he could always trace possible carriers.

74. **The Bipolar Bacillus of Influenzal Septicemia.**—Ciauri is director of the Stazione sanitaria marittima at Cotrone. He here reports the cultivation from the sputum and blood of patients with severe influenza of a micro-organism which induces septicemia in guinea-pigs. It appears in two forms, rods and ovals, but both take the stain strongly at both poles. The rods are gram-positive, the ovals gram-negative, but the two are always found together in the cultures. This bacillus was found only in the graver cases, those which seemed to be of a septicemic type. He calls it the bipolar diplomorphous hemoseptic bacillus. It does not develop on Endo-agar nor in Haffkine bouillon, and in glucosed agar it loses its bipolar staining properties, and there is no gas production. On plain agar plates, small low colonies develop in twenty-four hours, the outline slightly wavy, with the central portion granulated like yellowish sand. On Drigalski agar it forms small, polycyclic colonies with uneven surface, like a map in relief. [A cable news dispatch gives further details, such as that rats, fowls and rabbits are not susceptible to infection with this bacillus, and that up to five days may be required for the colonies to develop in culture mediums.]

75. **Urea Test of Kidney Functioning.**—Pirondini's work in this line has been previously described (Aug. 28, 1915, p. 835). Time seems to have confirmed the value of this test. The patient reclines, and the urine of a half hour is collected. Then he drinks 150 or 300 c.c. of water in which 10 gm. of urea has been dissolved, and after this the urine is collected at half hour intervals, the volume, urea content per thousand and the absolute content being recorded for each specimen. In all his cases the findings strictly paralleled the Ambard ureosecretory constant and the results of the phenolsulphonephthalein test. In four of six cases of infiltrating bladder tumors, the urea test findings corresponded perfectly to the necropsy findings in the kidneys. In two of these fatal uremic cases the liver was found extremely pathologic also. Catheterization of the ureters is not usually necessary. The functional disturbances which this induces are liable to obscure the interpretation of the findings. He extols various advantages of this test over experimental polyuria and other tests, and relates the findings with it after nephrectomy, especially in the pregnant. He reiterates that nephrectomized women may bear healthy children, even when the nephrectomy had been done with a pregnancy already under way.

76. **Gas Infection of War Wounds.**—Calo emphasizes that venous stasis offers specially favorable conditions for development of gas infection, and cites cases in which this or tetanus occurred without a wound, the limb being merely frostbitten. Wounds of blood vessels and "closed" wounds are the ones in which gas gangrene develops by preference. When the conditions suggest that it is impending, besides ample opening up of the wound to let the air penetrate into its remotest crevices, preceded by scarification of the venous territory in the infected zone, he urges generous venesection followed by mummification of the tissues affected with the gas infection. The tissue can be "mummified" with the actual cautery, a hot iron, or with unslaked lime. The lime absorbs powerfully the secretions and draws the water out of the tissues, reducing it to a mummified condition not only on the surface but down through the entire mass of the infected tissues, while it has no action on the sound tissue. It thus mummifies selectively; searing with a hot iron, etc., destroys the sound along with the infected tissues. The latter are evidently softened and the cells separated by the action of the anaerobes, so the calcium can penetrate the tissue, while it is unable to permeate normally compact tisssues. The calcium disinfects also as it works into the tissues. He has never had any mishaps with it, not even disagreeable sensations in wounds, etc., treated with it. The best quality of anhydrous lime on the market is powdered fine and kept in sealed packages till ready to use. It is scattered freely over the raw surfaces after the surgical toilet, trying to get it into every recess of the wound. When the gas infection is spreading, amputation must be prompt and quick—plane amputation close to the root of the limb, with live lime to the stump.

77. **Cure of Tuberculous Goiter.**—Giacinto reports the case of a nun, 42 years old, who for eight months had noticed that the right lobe of the thyroid gland was enlarging. Irregular neuralgic pains were also felt in the tumor, irradiating downward and outward or upward. These pains were variable, appearing usually in the evening, and were not modified by the ordinary sedatives. The temperature rose slightly toward evening. The hard tumor was tender, with irregular surface, and immovable except for slight movement during swallowing. There was slight emotional tachycardia, but no signs of exophthalmic goiter. The urine was normal. The weight had dropped over 15 pounds in two months. The diagnosis wavered between malignant goiter and woody thyroiditis, but an exploratory incision showed the capsule much thickened and bound down to adjacent tissues. A wedge was excised, 5 cm. long by 3 cm. wide; the inner end seemed to be normal tissue, but a cheesy tubercle was apparent above. No tubercle bacilli could be discovered. Treatment was by daily injection of alternating iodin and arsenic. Then two

weeks after the exploratory operation, when the wound was covered with granulations, the thyroid was exposed to the roentgen rays. Six exposures were made of ten minutes each in the course of six weeks. By the fourth exposure the pains were less, and the thyroid began to subside. Each exposure was followed by malaise and general prostration which was thrown off in twenty-four hours. In two months the wound was almost completely healed but the evening rise in temperature persisted a while longer. By the fifth month the patient had gained 22 pounds in weight, the complexion was good, there had been no pains for two months and the thyroid had returned to normal size and consistency except for slight hardness of the upper pole of the right lobe. The clinical recovery has persisted unmodified to date. No trace of tuberculosis elsewhere had been found at any time except a few small hard, movable and indolent glands in the right supraclavicular region, which were apparently not influenced by the treatment. Giacinto has found nine operative cases of tuberculous strumitis on record with an abscess; two terminated fatally and in one a fistula persisted. In the nine cases of ligneous tuberculous thyroiditis, three of the patients succumbed soon to complications, or to thyreopriva cachexia. The operation was done in these nine cases on assumption of cancer. The roentgen rays demonstrated a curative action also on an extensive tuberculous lesion on the tongue in a case reported by Stropeni in 1913. Gebele has published a case in which, after resection of part of the thyroid, the remainder was treated by roentgen exposures, and permanent clinical recovery followed. The retrospective diagnosis was tuberculosis.

78. **Tests of Kidney Functioning in the Young.**—Pirondini reports application of the urea test (described in Abstract 75), to children over 6 to puberty and to adolescents. The findings seem to indicate that the smaller size of the kidneys in the young is compensated for by a higher functional capacity, so that the functional performance does not differ materially from that in adults.

Riforma Medica, Naples

Aug. 24, 1918, **34**, No. 34

80 White Suprarenal Dermographism. R. Massalongo.—p. 666.
81 Occult Spina Bifida in Adult. L. Coleschi.—p. 668.
82 *D. Cotugno, 1736-1822. G. Gradenigo.—p. 671.
83 Immunization against Snake Venoms. E. Aievoli.—p. 674.

82. **The Anatomist of the Labyrinth.**—Gradenigo quotes from the great Italian work of D. Cotugno, 1761, to show that the latter was the pioneer in the anatomy and physiology of the internal ear. Time has confirmed the correctness of his statements, but Helmholtz published the same thing in 1862 as the results of his own original research, with no reference to Cotugno. Gradenigo suggests that it might be to the advantage of other nations, as well as Italy, to begin to take an inventory of their scientific patrimony, instead of continuing to accept at its face value the frequently recurring "Made in Germany" stamp.

Rivista Critica di Clinica Medica, Florence

Aug. 24, 1918, **19**, No. 34

84 Localization of Foreign Bodies by Horizontal Displacement of Roentgen Tube. E. and E. Pittarelli.—p. 397. Commenced in No. 33, p. 385.

Anales de la Facultad de Medicina, Montevideo

June, 1918, **3**, No. 3-4

85 *Gastro-Intestinal Derangement in Infants. L. Morquio.—p. 161.
86 *The Pathology of Labor. S. C. Rossi.—p. 233.
87 *Cancer with Pregnancy. Bottaro and M. B. de Bengoa.—p. 239.
88 Experiences with Various Forms of Serotherapy of Anthrax. H. J. Rossello—p. 251.
89 *Normal Horse Serum in Treatment of Anthrax. A. B. Langon.—p. 258.
90 Negative Seroreactions in Typhoid. A. N. Berta.—p. 265.

85. **Gastro-Intestinal Derangement in Young Infants.**—In this concluding instalment of his long study of this subject, Morquio discusses the therapeutic indications after the diet has been regulated. He discusses further the treatment of malnutrition and of diarrhea from other causes than the food. He emphasizes in particular that calomel is directly contraindicated in this latter type of diarrhea, and he does not advise its use for digestive disturbances of any kind in infants. In fact he declares that purges are given too much in treatment of infants. In some exceptional cases diarrhea may develop at some phase of teething, appear and disappear with it, without any other cause being apparent. If the gum is much swollen and the tooth close to the surface, the diarrhea may justify lancing the gum although he does not advise this as a regular thing. He warns that the urine should be examined for evidences of nephritis whenever we encounter a clinical picture in an infant which we are unable to explain. Palpation of the kidney may reveal a swollen pelvis. This is particularly liable to be encountered with digestive or influenzal infectious processes, or both combined.

86. **Occupational Diseases.**—Rossi discusses the pathology of labor as the first lecture of a course on occupational diseases.

87. **Cancer of Uterine Cervix in Pregnant Woman.**—Bottaro and de Bengoa report the cure of the cancer under radium and the successful termination of the pregnancy—the case apparently demonstrating that the fetus does not suffer from radium exposures, at least after the fifth month. The woman was at about the seventh month of her sixteenth pregnancy (with thirteen living children), and an infiltrating carcinoma, starting in the cervical mucosa, had been probably responsible for occasional metrorrhagia during the last twelve months. There had never been any pains. Six radium exposures were given in the course of six weeks, under which the neoplasm decidedly retrogressed. Then a vigorous child was extracted by cesarean section, which was followed by panhysterectomy. Six weeks later the radium exposures were renewed and supplemented with roentgen exposures. The woman has seemed to be in good health during the months since. The cicatrix in the vagina is movable, and there is no pain on pressure anywhere.

In conclusion they call this the "rochar" method of treating cancer of the cervix during pregnancy. This term is made up from the initials of the procedures applied, namely, radium, observation, cesarean, hysterectomy, annexectomy and radiations. They add that V. Asa of Madrid has reported a similar case, confirming that the radium exposures do not damage the fetus. Aza's patient, however, succumbed to heart disease in less than three weeks, so their case is the first conclusively successful one of the kind.

89. **Normal Horse Serum in Treatment of Anthrax.**—Langon reports 13 new cases, which added to Montebruno's 4 and 18 he has previously published, bring to 35 the number of patients with anthrax given subcutaneous injections of normal horse serum. He began with 30 or 40 c.c., to a total of from 40 to 100 c.c. and the lesion healed over promptly in every case, with no signs of serum sickness. Some of the cases were extremely severe ones but there was no mortality.

Revista de Medicina y Cirugia Practicas, Madrid

July 21, 1918, **120**, No. 1515

91 *Production of Heat with Thyroid Treatment. M. Bañuelos.—p. 65.

Aug. 7, 1918, **120**, No. 1517

92 *Physical Exercise and Memory. M. Bañuelos and Girbau.—p. 129.
93 Extraction of Projectiles under Radioscopic Control. R. V. Zeballos.—p. 134.

91. **Production of Heat During Thyroid Treatment.**—The rabbits tested showed always a marked increase in heat production under the influence of thyroidin. It was proportional to the dose.

92. **Influence of Physical Exercise on Memory.**—The capacity of fixation and retention of auditory and visual impressions seems to become reduced under the influence of physical exercise. The tests were made on Spanish students and soldiers.

Siglo Medico, Madrid

Aug. 17, 1918, **65**. No. 3375

94 *Bladder Stones. Angel Pulido Martin.—p. 661.
95 *Thyroid Deficiency. J. C. M. Fournier.—p. 665.
96 *Dynamics of Heart. M. B. Garcia.—p. 669. Cont'n.

Aug. 24, 1918, **65**. No. 3376

97 Handwriting and Drawing of the Insane. R. P. Valdes.—p. 685.
98 *Case of Beriberi in Spain. J. G. Castro.—p. 690.

94. Bladder Stones.—Martin calls the concretions which develop in an inflamed organ secondary calculi, and reports ten cases of the kind in children and in adults. The stones perpetuate the inflammation. Some of his cases emphasize the necessity for refraining from the use of silk in operations on the urinary passages, as it is liable to form the nucleus for stones. Also the necessity for keeping up the clearing out and disinfecting of the bladder until the interior surface has entirely healed over. Otherwise salts may be deposited on some scrap of tissue sloughed off around the high incision.

95. Congestive Form of Hypothyroidism.—Summarized on page 321 of The Journal, July 27, 1918, when it appeared elsewhere.

96. The Dynamics of the Heart.—Garcia discusses the effects on the heart activity of stimulation of the vagus nerve under different conditions of repletion and isomeric contraction.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

Jan. 12, 1918, **2**, No. 2

99 *Uric Acid Metabolism in Asthma and Rhinitis. A. de Kleyn and W. S. van Leeuwen.—p. 68.
100 *The Blood Picture in Pneumonia. N. Benstz.—p. 76.
101 Scabies in the Netherlands. M. W. Marsman.—p. 80.
102 The Food Supply. D. van den Bergh.—p. 81.
103 Mucocele of the Ethmoid. C. J. A. van Iterson.—p. 83.
104 Paretic Dementia; Negative Wassermann Reaction. H. Bolten.—p. 85.

99. Treatment of Asthma and Rhinitis.—De Kleyn and van Leeuwen confirm the statements of others in regard to the changes in uric acid metabolism just before, during and after an attack of asthma and attacks of vasomotor rhinitis. They tabulate the metabolic findings in twelve cases on a purin free diet, and during and after a day on which 100 gm. each of meat and of kidney or sweetbreads had been ingested. In comparison with normal persons, the excretion of uric acid in the urine was of the same type as in gout. This suggested treatment on the same basis as for gout, reduction of the purins in the diet and antigout drugs. The effect was remarkable in some of the rhinitis cases, and some benefit was apparent in the asthma cases but less pronounced. The significance of the abnormal conditions in respect to elimination of uric acid in their cases of asthma and vasomotor rhinitis was enhanced by the frequent discovery of metabolic diseases in other members of the families, especially gout. They urge others to inform them of cases of vasomotor rhinitis, asthma, gout and hay-fever in one family, specifying whether the diagnosis of gout is based on metabolic research or on the gouty big toe. The outlook is encouraging for great relief and improvement in vasomotor rhinitis under abstention from purins, with calcium chlorid according to indications, and possibly other antigout drugs. Acid drinks and dishes should be avoided as well as the purins.

100. The Blood Picture in Pneumonia.—Benstz examined the blood every noon before the midday meal in forty-four cases of croupous pneumonia. The displacement to the left of the Arneth count was most pronounced in the severer cases. Examination of the blood therefore usefully supplements and confirms the findings of clinical examination.

Hospitalstidende, Copenhagen

Aug. 28, 1918, **61**, No. 35

105 *Functions of the Cerebellum. S. Ingvar.—p. 1137.

105. Functions and Topography of the Cerebellum.—Ingvar presents an array of arguments, based on original research and the findings of others, to sustain the assumption that the main function of the cerebellum is to maintain and regulate the static and kinetic forces of the body, combating by reflex action the attraction of gravity and inertia. The remarkable uniformity in the structure of the cerebellum through the entire series of vertebrates is thus not so wonderful as it seems without this explanation.

Hygiea, Stockholm

Aug. 15, 1918, **80**, No. 15

106 Case of Bulbopontine Tumor. L. Brahme.—p. 865.
107 Disease of Urinary Apparatus in Children. G. Lindberg.—p. 890.

Ugeskrift for Læger, Copenhagen

Aug. 22, 1918, **80**, No. 34

108 Typhoid Cholecystitis; Recovery. W. Munck.—p. 1346.
109 Cat and Dog with Scabies. Frisch.—p. 1348.

Aug. 29, 1918, **80**, No. 35

110 *Roentgen Treatment of Exophthalmic Goiter. S. Nordentoft.—p. 1371. Commenced in No. 34, p. 1331.

110. Roentgen Treatment of Exophthalmic Goiter.—Nordentoft reports fifty cases of exophthalmic goiter given roentgen treatment, and discusses the participation of the thymus. The roentgen exposure was made for from forty to sixty minutes, at one sitting. Two or three exposures generally sufficed, with intervals of from four to eight or six weeks. The subjective improvement was marked from the first, the restlessness, tremor and subjective heart disturbances subsiding first, the goiter and exophthalmos more gradually; the tachycardia last of all. Even in the most favorable cases, the patients still display an unstable pulse and tendency to tachycardia on slight provocation. In several cases the desired effect was realized with a single exposure. This method of a few large doses with long intervals may be better adapted for certain cases than for others, as time will reveal. In any event, it is far more convenient for all concerned than a larger number of smaller doses. His fifty patients were given a total of ninety-nine sittings; in eighty-four the thymus was exposed as well as the thyroid, as he is convinced that the thymus is a factor in certain cases of exophthalmic goiter. He cites a number of cases from the literature in which with exophthalmos and tremor, etc., the thyroid was of normal size while the thymus was much enlarged, and marked improvement followed thymectomy. The thyroid and the thymus under other conditions seem to have an antagonistic action, but with exophthalmic goiter they seem to work in concert.

He presents series of data which sustain the assumption of a "thymus Basedow" and a "thymogenous exophthalmic goiter." If the thymus is mainly responsible, then removal of the thyroid would have little effect on the disease. The thymus is the organ that should be removed in such a case. This might entail spontaneous retrogression of the thyroid. These assumptions throw light on the 20 per cent. of failures reported in the larger statistics of thyroidectomies. He describes several cases of probable thymus origin, one in a man of 50 who had been under treatment for exophthalmic goiter two years before. The tachycardia, palpitations, slight exophthalmos, tremor, and Graefe's symptom, but no Moebius' symptom, were not accompanied by goiter, but they were so severe as to incapacitate him completely. His thyroid and thymus were given a single roentgen exposure, and within two months apparently complete health was regained and has persisted during the five months since.

Such experiences teach the necessity for applying roentgen treatment to the thymus as well as to the thyroid, or possibly to the thymus alone at the first sitting. Operative removal of the thyroid should not be done until after the failure of roentgen treatment, which Nordentoft says will be of rare occurrence. He queries whether it is not our duty to expose the thymus to the roentgen rays before any operation on the thyroid. In Søling's postmortem examination of eighteen exophthalmic goiter cases he found a persisting thymus in sixteen. The question also arises whether the cases of exophthalmic goiter that respond most promptly and favorably to roentgen treatment may not be those of thymogenous origin. Thymectomy is a dangerous operation, but the thymus is exceptionally sensitive to the roentgen rays. The effect begins to be apparent in about twenty-four hours. He reports some cases of spasm of the glottis with hypertrophied thymus, cured by roentgen exposure of the thymus. In conclusion he cites statistics showing 13 per cent. fatal cases of exophthalmic goiter among 1,300 given medical treatment alone, and 25 per cent. in the seventy-five cases at the Frederiks Hospital. In contrast to this is the zero mortality in Fischer's ninety-four and his own fifty cases given roentgen treatment. The full details of his fifty cases are tabulated. More or less benefit was realized in all and the improvement has persisted to date; only a few have been lost track of.

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MULTIPLE INFECTIONS

A STUDY OF THE RELATION OF ONE INFECTION TO ANOTHER *

WILLIAM W. DUKE, M.D. (Kansas City, Mo.)
Physician Attached to the American Red Cross
FRANCE

It is generally recognized that when a person has one or more infectious diseases, one may influence the other occasionally to the apparent advantage of the patient; but more frequently to his disadvantage. In other words, increased susceptibility to one organism may result from infection with another. This subject has been dealt with in the literature under such titles as mixed infection, metastatic infection, secondary infection and focal infection. It may be illustrated by familiar clinical examples. It is well known, for instance, that latent tuberculosis may become active and rapidly progressive after an attack of tonsillitis, measles or pneumonia. Osler mentions the fact that quiescent maladies, such as congenital syphilis and tuberculosis, may be lighted into activity by vaccination. Urethritis or chronic prostatitis is often unfavorably influenced by the onset of a new infection. Urethritis that is apparently cured may occasionally recur after an attack of tonsillitis, bronchitis or other acute infection. In a patient whom I observed, a urethral discharge in which gonococci were abundant was noticed a few days after a severe attack of tonsillitis. The patient gave a history of having had urethritis two years previously, but since that time had apparently been well and had not been exposed to fresh infection. Chronic cystitis of a mild type may become severe following an attack of diarrhea, cholecystitis or appendicitis. A patient who had specific disease that had been thoroughly treated and had been apparently latent for four years was covered with a copper colored papillary rash and gave a positive Wassermann test at the end of the first week of convalescence from typhoid fever. Another patient had an attack of pneumonia after the appearance of an acute alveolar abscess. Several weeks later he had a recurrence of active tuberculosis that had been latent for many years and had not interfered with the most active mental and physical work.

Chronic infections of a milder nature may also have a deleterious influence on other infectious diseases with which a person may be afflicted. This influence is often quite marked. The ill effect of chronic infections of the nose and throat on persons with tuberculosis is generally recognized, and proper local measures for the cure of these are looked on as an important part in the regimen for treating tuberculosis in many institutions. Oral sepsis may have an important influence on tuberculosis, and the eradication of oral sepsis may be of material value in arresting the progress of the disease.

Staphylococcic infections of the skin, such as acne and chronic furunculosis, according to Sutton, are often more amenable to treatment after the eradication of infected tonsils, alveolar abscesses, etc. In a patient with *Staphylococcus aureus* septicemia of more than two months' duration, the temperature fell to normal a few hours after the extraction of an infected tooth and remained normal for ten days. The case eventually ended in complete recovery. The roots of the tooth showed *Streptococcus viridans* in almost pure growth when cultures were taken, while repeated cultures of the urine and two blood cultures gave a growth of *Staphylococcus aureus*.

One chronic mild infection may influence the course of other chronic mild infections. For example, tonsils that appear to be chronically inflamed often become smaller and appear relatively normal after the eradication of severe oral sepsis. Chronic infection of the nasal sinuses may often be reduced in severity or apparently cured by the removal of infected tonsils or alveolar abscesses. Persistent cases of pyorrhea often yield rapidly to treatment after the removal of chronically infected tonsils or after the extraction of abscessed teeth. A patient who had been subject to recurrent attacks of slight jaundice associated with slight fever and pain in the region of the gallbladder for several years was apparently relieved permanently by the extraction of one abscessed tooth. Numerous similar examples with which careful observers are familiar could be mentioned.

EFFECT OF CHRONIC SEPSIS ON SYPHILIS OF NERVOUS SYSTEM

The ill effect of chronic sepsis on the course of syphilis of the nervous system is often very great, and on account of its practical importance will be dealt with in some detail. Syphilis of the central nervous system was suspected clinically and verified by lumbar puncture in 6 per cent. of 1,000 cases in office practice in which I made examinations on account of general medical complaints. One or more additional chronic infections thought to be of serious moment were found in nearly all of these. The coexistence of syphilis of the nervous system and chronic sepsis in persons observed in office practice is therefore common and very important. The fact that an infection in no wise related to syphilis may hasten the course and augment the symptoms of tabes dorsalis is well illustrated by the subjoined cases:

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* A portion of this article has been reported in brief by the writer in a monograph entitled "Oral Sepsis in Its Relationship to Systemic Disease."

Case 1.—A man, aged 35, had been treated two years for tabes dorsalis. Before treatment was started he had noticed slight ataxia and bladder disturbance and was subject to mild attacks of darting pain in the legs. He improved very satisfactorily under specific treatment, and after he had been free from pain and bladder disturbance for more than a year, he had an attack of acute tonsillitis. With the onset of this there followed a recurrence of the most severe lightning pains that he had ever experienced. Morphin and salicylates to the limit were required to keep him out of agony. Nothing was disclosed except the attack of tonsillitis to account for the sudden recurrence of severe symptoms of tabes. A tonsillar abscess developed, and when this was incised, the lightning pains at once ceased almost completely. A few slight pains were noticed until the tonsils were removed three weeks later. During two years since that time, the patient has been practically free from any active symptoms of tabes dorsalis and has required very little treatment of any kind to prevent recurrence of his previous symptoms.

Since observing this case I have made a careful search for chronic sepsis in patients with syphilis of the nervous system, and on finding it have eradicated it thoroughly before beginning antisyphilitic treatment. It has seemed apparent from the results obtained that many of the symptoms of early tabes dorsalis that one might attribute to progress of the disease, such as lightning pains, increasing numbness, paresthesia, ataxia and visceral disturbances, may be rendered worse by chronic sepsis and may be relieved to a considerable degree by its removal. In fact, one might assert, with reason, that in persons suffering from tabes dorsalis the removal of chronic sepsis as a therapeutic measure for arresting the disease ranks in importance barely second to specific medication itself.

Case 2.—A man, aged 50, with taboparesis, had been given thorough specific treatment for years. When he came under my observation he was unable to attend to business, and spent most of his afternoons in bed. All known methods of treatment had been pushed to the limit, and it appeared that very little improvement could be expected from further specific measures. The patient had large tonsils and several abscessed teeth. These were removed, whereupon the patient improved steadily and to an unbelievable degree. Within less than a month he was able to engage again in business. He has continued mild specific treatment, and has remained in active business since that time.

Case 3.—A man, aged 45, was brought in with a diagnosis of tabes dorsalis. Physical and laboratory examination left no doubt concerning this. The onset had been stormy, and for three weeks the patient had been fairly convulsed with darting pains and had hardly been able to control himself. He was so nervous and irritable at the time of the examination that it was almost impossible for him to remain quiet long enough to permit a specimen of blood to be obtained for examination. Lumbar puncture could not have been performed without general anesthesia. The teeth showed an advanced degree of sepsis. The abscessed teeth were all extracted. Within a few days the patient's condition was so much improved that he went back to work. He felt and acted like a well man even though specific treatment had not yet been administered.

Many cases similar to the foregoing could be cited. These are not unusual cases, but represent almost an average experience.

ALLERGY

The problem of multiple infections and the relationship which one infection bears to another is deeper and of greater interest than the simple fact that a person bombarded by two or more infections is worse off than if he had only one. One infection has an interesting relationship to other infections with which a person may be affected, and may be explained in part at least through phenomena described under the terms allergy, protein sensitization and anaphylaxis.

A true toxin is not formed by any of the microorganisms that ordinarily take part in the pathology of infection in human beings with the exception of tetanus and diphtheria bacilli. Killed cultures of all other organisms or extracts of the organisms, or the culture mediums in which they have grown may be injected in large quantities into healthy guinea-pigs without immediate gross ill effect. They differ strikingly in this respect from tetanus and diphtheria bacilli, each of which produces a true toxin that is poisonous in high degree when administered subcutaneously even in very minute doses to animals. The products formed by other organisms that cause disease may be extremely toxic, however, through an entirely different mechanism, namely, the development in an individual of a condition known as allergy. This term, introduced by Pirquet, is used to designate the changed condition of human beings or animals, caused by infectious diseases or produced by inoculation with alien proteins, which causes the individual to react in a peculiar way if the bacteria responsible for the infectious disease or if the protein with which he may have been inoculated is reintroduced into the circulation. The ensuing reaction is in some respects protective and beneficial, but in other respects may be harmful and even dangerous.

Allergy and its effects are well illustrated by the action of tuberculin. Killed tubercle bacilli or their extracts, or mediums in which tubercle bacilli have grown, may be injected in large amounts into normal untreated animals without gross immediate ill effect. If even minute quantities are injected into animals or persons with tuberculosis, however, the effect is entirely different. Instead of its being apparently inert it causes a reaction which may result quickly in death. The changed condition of the animal produced by the tuberculous infection which renders it sensitive to the products of the tubercle bacillus is the condition known as allergy. Several striking phenomena follow the introduction of tuberculin into tuberculous persons or animals which never appear in the nontuberculous. These are, first, pain, swelling, redness and sometimes necrosis at the site of inoculation. This is known as the local reaction. Second, a rise in temperature and pulse rate and general symptoms of toxemia, which phenomena are known as the general reaction. Third, inflammatory changes at the site of all active tuberculous lesions. This is known as the focal reaction. This last phase is very interesting and may be used in explaining many of the phenomena observed in multiple infections. It may be slight or may be well marked. It may hasten the breaking down of tuberculous tissue and lead to rapid spread of the disease.

Some persons with tuberculosis become so sensitive to products of the tubercle bacillus that amounts of tuberculin as minute as 0.001 mg. are sufficient to produce severe reactions and to cause local inflammatory reactions at the site of all active tuberculous lesions. Others tolerate larger amounts. A reaction as described above can be produced in tuberculous animals by the subcutaneous injection of living tubercle bacilli as well as by extracts of the organisms. If tuberculous guinea-pigs are inoculated with living tubercle bacilli, a local and general reaction results within a few hours essentially similar to the reaction produced by the extracts of dead bacilli. If nontuberculous animals are similarly inoculated, no such reaction ensues, but the animal after a period of days or weeks becomes ill and dies of tuberculosis. If a localized tuberculous lesion in human beings (such as a tuberculous joint) is subjected to massage and manipulation, living tubercle bacilli or their products gain entry into the circulation, and a transitory rise of temperature and other symptoms of a general reaction may follow. This may be associated with an increase in the inflammatory reaction at the site of all other active tuberculous lesions (focal reaction).

The foregoing well known facts regarding tuberculous infection and the sensitization produced by it are true of infections in general. An attack of typhoid, for example, renders an individual sensitive to the protein of the typhoid bacillus, an attack of furunculosis renders one sensitive to *Staphylococcus aureus*, etc., so that persons having these diseases usually show a local, general and focal reaction if they are inoculated with killed cultures of the offending bacteria. This may temporarily increase the severity of the infection, the degree of which would depend to a certain extent on the quantity of bacteria injected.

Persons with chronic furunculosis may give a general reaction within a few hours if they are inoculated with an excessive quantity of killed staphylococci, and the furuncles are made temporarily worse. Such persons react similarly when they are subjected to the effect of an increased number of living bacteria due to the development of a fresh furuncle. This often causes both a general and a focal reaction. For example, with the development of a fresh furuncle there may appear fever, malaise, etc. (general reaction) and an exacerbation in the inflammatory process in recent furuncles (focal reaction). In fact, signs of activity, such as itching and redness, may appear in the scars of recently healed furuncles. This may be followed by a discharge of pus containing *Staphylococcus aureus*. These well known principles are true of infection in general and can be used in the explanation of many interesting phenomena. It often explains the reason why with the onset of a new infection signs of irritation and inflammation may appear within a few hours at remote points. Case 4 illustrates this:

CASE 4.—A woman, aged 60, relatively normal for her age, had ten infected teeth extracted. Less than twenty-four hours afterward there developed a severe acute follicular tonsillitis. Several days later the infection began to spread from the gums to the cheeks, pharynx and tongue, and give rise to an extensive ulcerative stomatitis. The point to be emphasized here is the fact that the inflammatory reaction in the tonsils, while relatively distant from the gums, occurred within a few hours and preceded by several days the infection of the neighboring tissues of the mouth. It occurred after too brief a period of time to be the result of direct infection of the tonsil by the organisms disseminated from the alveolar process, and must have been a reaction of tissues sensitized by the organisms already localized in the tonsils. It was analogous in every way to the focal inflammatory reaction in the lungs that may be brought about in tuberculous individuals by the injection of an overdose of tuberculin.

It is by no means uncommon to observe pain in the region of the gallbladder, appendix, stomach, joints, cervical glands, etc., a few hours after the extraction of infected teeth, and such may frequently be interpreted as focal reactions caused by the traumatic dissemination of micro-organisms or their products from the alveolar process.

Frequently the clinical manifestations of chronic appendicitis, cholecystitis, gastric and duodenal ulcer, chronic arthritis, etc., clear up rapidly after the extraction of diseased teeth, even though the first effect may have been an increase in the inflammatory processes. Occasionally chronic inflammatory conditions that appear to indicate the need of surgical interference and serious internal diseases that cannot be reached by therapeutic agents partially clear up after as simple a procedure as the extraction of a tooth or the removal of a pair of diseased tonsils. The relief can often be attributed to the fact that sources of bacterial products that have been continuously causing focal reactions in the infected organs have been removed.

This explanation applies very nicely to multiple infections when each lesion is caused by the same micro-organism. It may or may not apply in part to lesions caused by different micro-organisms. This question is an open one about which much might be said. For example, if a person has streptococcic tonsillitis, a latent streptococcic infection in the joints and in the gallbladder, it would be in harmony with accepted theories if an acute exacerbation of the tonsil infection were followed in a few hours by a reaction in the joints and gallbladder that caused pain and other phenomena of a focal reaction. This explanation, as previously mentioned, would not apply in the same way to multiple infection if the various lesions were caused by different micro-organisms, because sensitization against the protein of an infecting organism is thought, and I believe correctly, to be more or less specific. Whatever the theoretical explanation may be, we have this fact, which is beyond dispute: Infection with one micro-organism may lower the resistance against other micro-organisms to a degree that is by no means negligible. I dealt with this above, and mentioned clinical examples. One further illustration even more striking may be added here:

CASE 5.—A patient, aged 35, apparently in good health, had a severe attack of erysipelas, evidently streptococcic in origin. A few days after this a very insignificant pustule no more than 2.5 mm. in diameter which showed *Staphylococcus aureus* on culture began to spread with great rapidity and within a few days gave rise to an extensive phlegmon which persisted for two weeks. In this instance the streptococcic infection certainly had lowered resistance against *Staphylococcus aureus.*

TYPES OF IMMUNITY

There apparently exist two types of immunity—a specific immunity and a nonspecific immunity. Nonspecific immunity has been made use of in the cure of disease by Miller and Lusk, Jobling and Petersen and others, who have injected alien protein of different types (including killed typhoid bacilli) in the treatment of arthritis and other infectious diseases. While the results obtained were not invariably a complete success, they were sufficiently striking to warrant the observers in concluding that nonspecific immunity is often an important factor in the cure of disease. The inoculation of infected persons with an alien protein, such as typhoid bacilli or albumose, may cause general reactions that render the patient's condition temporarily worse. Often it also causes focal reactions in the infected areas. For example, in persons with arthritis the joint pains may often be more severe a few hours after the intravenous injection of typhoid bacilli. Persons with tabes dorsalis frequently have sharp, darting pains in the legs after similar intravenous injections. The reactions that are produced by the injection of alein proteins are often very similar to reactions that follow inoculation with the specific organism that causes the person's disease. It is not inconceivable that frequently repeated inoculations with a nonspecific virus might cause repeated reactions in inflammatory lesions due to other organisms and in this way do harm and cause an exacerbation of the disease. It is possible that one infection may exert a deleterious influence on lesions caused by other micro-organisms in some such way as this and might in part explain the cure of one infection by the removal of another infection in no wise related to it.

PRACTICAL CONSIDERATIONS

This paper has been written because of its practical bearing on the treatment of infections. Whether or not the explanations given are the correct ones, these facts stand, I believe, proved and beyond dispute: 1. In persons suffering from multiple infections, each infection may increase the severity of the others whether due to the same or to different organisms. 2. Removal of one infection may, under favorable conditions, be followed by spontaneous healing or improvement in the others. A physician often is faced by a combination of infections, some of which are removable, and others not. A consideration of problems of the relationship between infections often aids in the practical handling of the situation. If minor infections are promptly taken care of, those that are more serious may take care of themselves.

CONCLUSIONS

1. When a person has several infections, each may increase the severity of the others whether due to the same or different infecting micro-organisms.
2. Acute exacerbation of one chronic infection may stir up other apparently latent infections into activity.
3. The removal of one infection may under favorable conditions be followed by spontaneous healing or improvement in others.
4. If minor infections are properly taken care of, those that appear serious may yield more easily to treatment.
5. Chronic sepsis exerts a serious influence on the course of tabes dorsalis, and its removal is frequently followed by amelioration in the symptoms of this disease.

Effects of the War on the Next Generation.—The general physical standard of the men who have joined the colors is necessarily on the average distinctly better than that of the men who have not joined. Only men above a certain level of physique are accepted; men of smaller build or weaker constitutions are rejected. A heavy loss of life has occurred, and is yet to occur among the men who are fighting with our armies. No corresponding wastage is occurring among those who are not fighting. The result must be that the average physical standard in this country of males of the ages of say 20-40 will be much lower after the war than it was before the war. This lowered standard will be reflected in children born in subsequent years; and will begin to be recorded at school medical inspections about the year 1921, when the children born in 1916 are entering on their school life.—Dr. D. Morley Mathieson, M.O.H., South Shields, England, *Medical Officer.*

THE TREATMENT OF LYE STRICTURES OF THE ESOPHAGUS*

THOMAS HUBBARD, M.D.
TOLEDO, OHIO

In 1910, Dr. Jackson made earnest appeal for legislation to protect innocents from lye products sold for domestic use. Careless and misleading labels and indiscriminate distribution of caustic cleansers have been responsible for many of these accidents and food and drug laws do not penalize the manufacturer or agent. They are put on the market to be used by housewives and certain it is that the more careless the housewife the more likely she is to use the stuff and, also, the more liable she is to have more children than she can safeguard.

These overworked women and their children deserve what protection the law can give them against the commercial shark and it seems to become the duty of the medical profession to keep hammering away until they are heard. Caustic alkalis and cleansers should be caution labeled and the sale restricted as are all poisons.

There are a few important features of lye corrosion which should be mentioned. The mouth secretions usually protect by dilution the throat and hypopharynx and, as a matter of clinical observation, the real escharotic effect is usually in evidence at the cricoid or about the depth of the bronchial region and above the hiatus.

It seems that at these points the caustic is arrested briefly, or owing to the somewhat delayed spasm excited by the irritant, the bolus is retarded in the lower esophagus and enters the stomach slowly. This accounts for the fact that comparatively few of these victims exhibit stomach lesions, the acid secretions neutralizing as fast as it reaches the organ. The esophagus is a senseless kind of an organ, that is to say, deficient in sensible nerves and inclined to throw spasmodic fits much to the detriment of its own welfare. But we must label this a conservative physiologic action in that it aids in protecting the more complex, vital organ, the stomach. Most of these victims vomit rather promptly and thus does the stomach repay the self-sacrificing esophagus by furnishing the antidote, acid secretions.

CASES OF LYE TRAUMA

I have seen two fatal cases which I will briefly mention to make clear the serious effects of lye trauma in the stomach.

One, a lad, aged about 12, who had swallowed lye at 2 years of age. The stricture was not complete and he had existed on liquid nourishment for ten years. He was diminutive and emaciated to a skeleton—no hair, no teeth, a pitiful little old man. Gastrostomy was done and an effort made to build him up before dilatation of the stricture was attempted, but there was evidently atrophy of the gastric mucosa, and he died in about a month from inanition.

The other fatal case was that of a girl of 5 years who had swallowed lye six months previously. The stricture of esophagus was of moderate degree, but she could not digest anything and died in a few weeks of inanition.

A third case is reliably reported to me. Lye was swallowed at the age of 5. No esophageal lesion followed, but life has been a wretched existence well into manhood. He suffers from malnutrition, poor development, bad teeth, etc., due probably to lye destruction of the gastric mucosa.

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* Read before the Section on Laryngology, Otology and Rhinology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

The youngest patient I have treated for lye stricture was a baby 1 year old. He had eaten a lump of caustic powder sprinkled on the floor preparatory to a scrubbing. The stricture was in evidence about two months later, located near the cardia. The usual roentgen-ray barium examination, followed by the Sippy wire guide under esophagoscopic control, and then gradual dilatation over a period of about two months effected apparent cure. This family left town and I cannot give the end result.

I have seen just such cases in older children and adults with moderate strictures and big dilatations above having obstruction to deglutition periodically when retained food caused increase of inflammation at the site of stricture. These cases should be watched over a period of years.

The next case presents unusual features, in that the strictures involved the lower 3 or 4 inches of the esophagus and the canal was very tortuous, with small sacculations between constrictions. This was shown in the roentgenogram, and esophagoscopic control in the early period of treatment was very difficult because of the impossibility of passing a tube below the bifurcation level.

This lad of 6 had swallowed lye eight months previously and the esophagus had been occasionally bougied roughly, but finally it had closed tightly. No liquids had passed for four days and he was sent in to the hospital by the family physician for gastrostomy.

Under esophagoscopic control, I passed several whalebone filiforms down and got one through; then a larger bougie and finally a small catheter which was left in, fastened to the teeth. Through this he was fed for two days and on removal he swallowed liquids fairly well, but it soon closed, and again the filiform method had to be repeated.

On account of the dilatation and sacculation above the first stricture, it was impossible to get the Sippy wire guide through without the aid of the esophagoscope, and, as a lad of this age, and Scotch at that, naturally and forcefully resented a steady diet of metal tube, I resorted to the braided string method. It took about five days to get 7 yards down. Any shorter length than that (there was probably some snarling) did not give firm enough anchorage to keep the olive guide in the tortuous passage.

(Experiences in water hunger and starvation nerved this lad of 6 up to willingness to aid in the work, and he played about with the spool pinned to his jacket, and his mother daily cut off a few feet which passed clear through. I mention these details because this heroic little fellow deserves it. Few would tolerate it. His companions learned to appreciate his courage and more than one newcomer got a good thrashing for making fun of him.)

Two weeks, with dilatation every other day, brought the lumen up to 29 (F.). Progress was very slow in this eight-months-old multiple stricture.

Even after that it was difficult to avoid entering a saccule. For two years the dilatation was held at 31 (F.) and I considered him cured and with prospect of a perfectly useful esophagus, provided it was occasionally dilated as he grew. At about the age of 9 he died of acute septic meningitis, being sick only four days.

Was gastrostomy indicated in this case after the four days' starvation? It was probably more of a venture to attempt dilatation with possibility of failure than to have done gastrostomy with certainty of getting fluid into the stomach. The conclusion is that in patients exhibiting extreme water hunger, prolonged effort to enter the stenosed esophagus should be avoided and preparations for prompt gastrostomy should be the rule. The string method is not practical because of lack of time.

A little Welsh war baby, aged 2 years, has been under treatment for six months now. She was starving four months after drinking diluted lye. Water hunger was extreme, stools were like chalk and she was emaciated to the limit.

The stricture area begins at the bronchial level and extends to the cardia, three distinct stricture bands being in evidence. For the first month it was necessary to pass the guide through the esophagoscope. The first few dilatations, under light anesthesia and with aid of the esophagoscope, were comparatively easy, but frequently after that it was difficult to pass the guide even though she swallowed liquids readily. There is a crescentic band at the bronchial level and some dilatation above it. In a comparatively recent case like this the difficulty was probably due to softened sloughing mucosa into which the guide would plow.

In all such cases, one must use the esophagoscope and take unusual precautions to avoid perforation until a free straight passage is well established. The dilatation intervals are too long in this case, as the patient lives out of town and progress is slow—now held at 26 (F.) for six months.

DILATATION AFTER GASTROSTOMY

The worst case I have encountered and the one that presents some special features for discussion is that of an adult who swallowed about half an ounce of concentrated sodium hydroxid in an attempt to establish siphon flow by mouth suction through a large rubber tube. Himself a chemist, he was so choked and shocked by the accident that no neutralizing antidote was taken. Spontaneous emesis soon after probably saved him from fatal consequences.

I first saw him about three weeks after the accident and soon thereafter passed the esophagoscope. The throat and hypopharynx were quite denuded of epithelium and a stricture web was forming near the cricoid. This was easily passed, but at the bronchial level the esophagus was nearly closed by edema. Below this, all was macerated and the mucosa peeled off before the tube, or bougie.

There was still considerable pain deep behind the sternum, and it was evident that it was a very serious trauma. No sound was passed, as he was getting sufficient fluid through, and it was decided to try rest and sterile liquid food with local medication to reduce the inflammatory swelling. Bismuth carbonate and argyrol was given, and, to allay spasm and pain, orthoform in emulsion was swallowed prior to taking fluids. Under this treatment he improved.

Three weeks later I succeeded in passing a small tube down to about 2 inches from the cardia, but I could not get even a filiform through the softened, bleeding lower esophagus. Roentgen-ray barium examination about this time was instructive. A fine, narrow thread gravitated into the stomach. In such serious cases it is important to determine the degree of muscle involvement. It would seem that by this means the deglutition muscular activity may be studied. Deep destruction of esophageal wall, including muscle, increases liability of perforation and also affects the prognosis.

Possibly I delayed too long before attempting the string guide method, and this was also unsuccessful. He had acquired the regurgitant habit, and, after getting down a yard or so, would promptly regurgitate, even though fluids passed into the stomach.

Absolute closure came rather suddenly, probably being due to exfoliation of the lower 5 inches of mucosa, and gastrostomy was done to save him from starvation, about four weeks after I first saw him. It was a perfect operation, performed by Dr. Lewis Smead, and three weeks later he was in normal strength and working regularly. Having failed to get the esophagoscope below the bronchial level, I tried to pass the guide from above under fluoroscopic control and failed. Dilatation from below was successful; that is, I passed the bougie —a urethral sound of proper curve—up to 10 inches from the incisors to the upper stricture.

Then I again dilated the firm stricture at this point from above through the esophagoscope and finally succeeded in getting the wire guide through the 5 inches of tortuous canal. Whole plaques of softened mucosa came away with each operation of passing the olives.

Gradually dilatation was accomplished up to 37 (F.), at which we now encounter rather firm resistance, in the form of about four stricture bands in the 5 inches, the worst being at the hiatus.

Was the resting of the esophagus overdone in this case? Probably a bougie could have been passed early, but at the time I first saw him the tip of any bougie seemed to bury itself in any direction in the sloughing tissue, and as submucosa and possibly muscle seemed involved, the indications were to avoid extra trauma. Gastrostomy should have been done two weeks earlier and then the string guide method would not have failed.

Retrograde dilatation seemed very easy on first trial, but on a second and a third attempt with a longer bougie of same curve, I could not find the orifice. Probably this was due to irregular stomach contraction combined with cardia spasm.

METHODS OF DILATATION

Now a few words about the Sippy method. For safety and precision it seems to me ideal. The essentials of the technic, as I have found by experience, are as follows: First, know your measurements; second, be sure that you are well into the stomach with wire guide and then go clear through with the properly selected olive bulb on the cable. If you try too large an olive and fail to get through you may pinch a band of stricture tissue between two of the olives on extraction—rather risky but even at that sometimes beneficial.

The successful dilatation of strictures of this class makes possible but does not insure a cure. The work is only half done. With starvation threatening, these patients are very obedient, but they are liable to neglect subsequent treatments and, every time a stricture tightens up, the tissue is more firm and unyielding. It is important to decide on the maximum dilatation, hold it there, and in children try to keep up with growth. It should be 26 in a 3 year old child and from 35 to 40 in an adult.

I have in mind a rule which establishes the maximum. Dilating olives are graduated on the 1 mm gradation. It usually takes about three stretchings before the olive will pass easily, warranting increase in size the next time. When one has reached a degree of dilatation that allows normal deglutition, one may determine the maximum in that particular case by this test. If five or six dilatations at short intervals bring no improvement, that is, resistance does not yield, the probability is that one has reached the limit. This should be controlled by roentgen-ray bismuth study to determine the amount of dilatation above the stricture (Jackson).

With forcible dilatation of strictures, I must say I have had little experience. In single strictures of limited area, forcible stretching seems indicated. But in lower tortuous multiple strictures with intervening sacculation, such as we usually have in lye cases, it seems to me quite impracticable and even hazardous. The element of danger lies in the fact that the weakest spot will yield first. In crescentic folds this means perforation.

I am in favor of holding the maximum dilatation by passing a specially adapted olive bulb at frequent intervals. This seems better than the flexible bougie. One knows positively when one is through the stricture. With the flexible fiber bougie one is never quite sure, especially in children.

In gastrostomized cases, the stomach tube should be retained even after dilatation is well advanced to give confidence to the patient; and also, in case there is any considerable trauma from dilatation, the esophagus may be rested by direct feeding until inflammatory reaction has subsided

DANGERS AND LIMITATIONS

At best the work is tedious and slow and there is always an unknown element of danger. Much depends on the intelligence and cooperation of the patient. And as lye trauma occurs chiefly in the very young, it is certain that some of these cases are permanently injured and more or less handicapped for life.

There is liability of unwise restriction of diet. The natural habit is to select only soft, easily masticated foods. This results in malnutrition and retards development of teeth, bone and muscle. These unfortunates may be allowed to eat all kinds of food if only they are trained in the art of proper mastication.

Now it is not a surgical triumph to prolong a wretched existence. We must see these patients through and try and make the end-result creditable to the art.

ABSTRACT OF DISCUSSION

Dr. Chevalier Jackson, Philadelphia: It does seem too bad that in practically all of the states of the Union, if a druggist sends out caustic alkali he is compelled to label it, to put a skull and cross-bones on it, giving an antidote; and that caustic alkali is put on the medicine shelf. Next door to the druggist the grocer can sell caustic alkali which goes into the kitchen and is used for dishwashing and various other purposes about the kitchen, but it is not required of the grocer that he put one word on the package as to the poisonous nature of the contents. If there is any mention of poison at all it is so small as to be altogether inconspicuous. This should be regulated by law.

Many other interesting points were made by Dr. Hubbard, but I shall take time to refer to only a very few of them. In regard to the stomach being unaffected, it does seem strange that so little harm is done when caustic fluid goes down into the stomach. I saw one case in which the patient had a pyloric stenosis as well as an esophageal one. It was thought that the pyloric stenosis was due to the effect of caustic alkali; but it seemed to me doubtful. We came to the conclusion that there had existed a congenital pyloric stenosis and that it had increased; but was not due primarily or secondarily to the caustic alkali. In regard to trauma from faulty bouginage, the French clinician, Trousseau, in the pre-esophagoscopic days, said that sooner or later patients with esophageal stricture died of the bougie. Why? Dr. Hubbard referred to a cicatricial band. He knew what the local conditions were because he had looked at them. Blind bouginage is dangerous. Safety necessitates a slow procedure under the guidance of the eye.

Another point that I wish Dr. Hubbard would make reference to in closing is how soon after the accident we ought to use the esophagoscope. I feel reluctant to use it soon. It should be decided whether we should pass the esophagoscope at once and institute the treatment Dr. Hubbard suggests, or wait for three or four weeks. Another point is that in these cases there is nearly always an intermittent difficulty in swallowing. These people will go along with little trouble apparently for awhile and then for perhaps two days at a time they cannot swallow anything, as a result probably of esophagitis or the lodgment of food, or both. In regard to dilatation, the matter can be summed up in a few words—that with the rapid method the outcome will be a few brilliant cures but a very high mortality. Esophagoscopic bouginage is safe, but it is very slow.

DR. F. KEIPER, Lafayette, Ind.: One case which I have just finished treating temporarily (I say "temporarily" because very often these strictures have to be dilated again), was in a child, three years of age, who had swallowed only a thimbleful of lye. When I examined that esophagus I found about three inches of a very tight stricture at the cardiac end of the stomach. I believe that in all these cases the first thing to do is to have two roentgenograms, one laterally and one anterior posterior, because they give valuable information that we ought to have in the subsequent dilatation of these strictures. Then, again, no examination should be complete unless the esophagoscope is passed. It is surprising how much assistance this gives sometimes. By passing a large esophagoscope you dilate the esophagus more or less, so that on looking down through the esophagoscope you will be able to find the point of entrance into these very narrow strictures. In this case the stricture was so small that it would accommodate only the smallest of the Jackson filiform bougie, on the end of a long steel rod and then with great difficulty. I attempted to pass a Jackson bougie that carries a string, but I was unable to get through because it is a stiff steel bougie. Then it occurred to me to perforate the filiform and use that as a means of passing the string through the stricture, and I was successful in working the string back and forth through that, and cut the stricture. Of course we get but little help thus but it all counts. Patients will ask, how many dilatations will have to be made; but we cannot tell; it may require fifty or sixty and maybe more. I do think, however, that nothing should be passed, not even a filiform bougie except with the esophagoscope in place.

Another point brought out by the essayist is that it is not necessary to anesthetize the patient. This can be done without any anesthetic whatever. Of course, these little patients require to be restrained, by wrapping them tight in a sheet or blanket and then held by an assistant in order to make the first few passages, but after awhile when the patients understand better we do not have much trouble.

There is another class of burns seen sometimes among farmers when they use hydrochloric acid to burn off warts on cattle. Every once in a while some child takes a drink of that stuff. I have seen two cases where children had been sent to me in order to have the esophagus dilated, because of regurgitating of food, but in those cases I never found a stricture of the esophagus. The hydrochloric acid evidently damages the mucosa of the stomach very seriously. Whenever I find a case of this kind the only thing to do is to turn the patient over to a competent internist in order that they may have the proper care and nourishment.

JOSEPH A. STUCKY, Lexington, Ky.: I have had four cases of stricture of the esophagus as the result of swallowing lye. A few years ago when Dr. Jackson first called attention to this matter I suggested that each one of us consider himself a committee of one on publicity and get in touch with the newspapers, having them say something about it. I am sure that in the last year I have seen a fatality as the result of too much force in passing the bougie. I had seen this child the day before, after giving it some bismuth. It passed out of my hands, but a few weeks later I saw an attempt made to use a bougie. I know that it went through and the child died. We should not only use the greatest care, but we should operate by sight alone. Now that we have the roentgen ray and the fluoroscope there is no excuse for our not seeing what we are doing. In two of my cases there has been involvement of the pylorus, and in order to sustain my patients I had to get the assistance of a general surgeon and have the stomach opened and feed the child that way.

I hope that the attention of the public will be called to this and that the grocer as well as the druggist be obliged to label lye.

DR. GEORGE F. COTT, Buffalo: A few years ago I reported sixteen cases of stricture of the esophagus. You have heard the sad side of this, but there is also a bright side. A little boy, about two years of age, who had swallowed some lye, came into the hospital and after several attempts to pass a small bougie it was given up. A woman connected with the hospital took pity on the boy and adopted him. He is now enjoying all the luxuries of wealth—that is one of the bright sides.

DR. WILLIAM B. CHAMBERLIN, Cleveland: One thing Dr. Hubbard failed to mention is the decided value of the Jackson two-pronged dilator, which has a very narrow tip. It can be inserted easily into a very small stricture, provided, of course, that you are able to get the filiform through and realize this is the true opening. In my hands this instrument has proved of very great advantage.

DR. JOSEPH C. BECK, Chicago: I have under my care at present a case of trauma of the esophagus, an acute condition which I believe I was instrumental in bringing about. A man weighing 200 pounds came to me with a history that he had had more or less difficulty in swallowing for a year, and this difficulty is increasing so that at times he has considerable difficulty in swallowing saliva. I noticed that the man had a very severe burn on the hand which dated back before the years when he had trouble with his swallowing. In other words, I suspected that this was a case of stricture of the esophagus that we are apt to see following certain conditions of the external part of the body. At any rate, the esophagoscope was passed behind the cricoid and below that the puncture was made. I suspected carcinoma, but when I looked I found a quantity of liquid, like soup, with a little solid food in it. I sucked that out and used the fluoroscope and roentgen ray. The diagnosis was made, but the interesting point is the complication. The man's esophagus closed up so that he could not get any food down. This was seven or eight days ago and he has not had any food, except through the rectum. I consulted a surgeon in this case, but he would not do a gastro-enterectomy in this case as he believes the man is well nourished and does not need this treatment. The next day the urinalysis showed sugar; he probably had it right along. In diagnosing these cases the important point is the examination.

DR. C. C. KNEEDLER, Pittsburgh: Dr. Hubbard spoke of one of his cases as an ambulant case. Do you not consider them all hospital cases?

DR. EUGENE LEE MYERS, St. Louis: A child accidentally swallowed concentrated lye. After prompt antidotal treatment by Dr. A. H. Juengel of St. Louis, the child was brought to me for the difficulty in swallowing. In due time an attempt was made to do an esophagoscopy which revealed three strictures, the lowermost being very difficult of dilatation. The instruments that I tried to use were of no avail. I was in great fear of perforation, as every attempt I made with the bougie would bring the bougie with a turn to the left, and I realized that I had a tortuous channel. I then proceeded to treat this stricture similarly to strictures of the urethra, using glycerin and olive oil as an emollient. I made use of the smallest Killian tube, which has an obturator. With the greatest of care I passed the stricture and removed the obturator and was pleased when the bougie slipped through the tube into the stomach. I then removed the tube, leaving the bougie in situ, after the principle used in leaving a filiform in the urethra. The child was in good condition at that time, but on my return to the hospital that night imagine my surprise and chagrin to find the little one with a temperature of 104 F. and pulse of 170, apparently moribund. I was of the belief that I had punctured the esophagus, but careful examination with Dr. Thomas W. Taylor and Dr. A. H. Juengel brought out the fact that the child had a double pneumonia, the cause of which could not be laid to the anesthetic, as chloroform was used.

Questioning the mother brought out the fact that the child had a severe chest cold previous to the instrumentation and it is probable that our working in the esophagus for the length of time that I found it necessary (two hours) caused the pneumonia to develop. After several dilatations in the office, the family discharged their child, claiming the boy was eating to their satisfaction, notwithstanding all my efforts to have him bougied at intervals. At the time of my last inquiry the boy was still eating everything without any signs of a stricture.

Dr. Thomas Hubbard, Toledo, Ohio: With reference to legislation, I would say that some years ago, soon after Dr. Jackson's paper appeared, the Bureau of Chemistry and the Department of Agriculture undertook some legislation in this regard, but it evidently has been hanging fire and nothing has been done. But I think that this organization, with the assistance of the Council on Pharmacy and Chemistry, can push it through. Many of these matters suffer delay through indifference and not positive opposition.

How soon to pass the esophagoscope after trauma? That it a very important question. In the last case I passed it three weeks after the trauma. At that time it looked like a ruined esophagus. As a factor in lessening the trauma, a light anesthetic is needed in most of these cases, especially in children. Sometimes sudden closing of the esophagus is caused by exfoliation of the mucous membrane which peels off and plugs the tube. That is what occurred in the case mentioned. Gastrostomy became urgent. In cases where the patient has been known to swallow lye and there is no esophageal lesion, watch out for gastric lesions. The longer the detention in the esophagus the less likely there is to be stomach disturbance. I have had no experience with the Jackson dilator.

I do not think we should consider all of these cases hospital cases. Just as soon as the acute stage is over they ought to be treated and trained at home. The adult and the child has to be trained and you might as well begin it early. They have to be instructed as to the selection and mastication of food, consequently I think they are home cases just as soon as the more important instrumentation period is over.

THE NATURE OF SURGICAL SHOCK AND HENDERSON'S THEORY OF ACAPNIA *

A. OSORIO DE ALMEIDA
Professor of Physiology, Medical School of Rio de Janeiro
AND
MIGUEL OSORIO DE ALMEIDA
Professor of Physioloogy, High School of Agriculture
RIO DE JANEIRO

The problem of shock is at present the direct object of energetic research in various scientific laboratories of the United States. The purpose of this research is to determine in the briefest possible time the true nature of this peculiar condition. The urgent need for such investigation is easily understood in view of the fact that large numbers of wounded soldiers are constantly being lost through our inability to treat cases of this nature successfully.

Before the war, the question of shock had been studied in detail, and distinguished among the publications presented on this subject are those of Yandell Henderson. Some time after the appearance of Henderson's work in which the theory of acapnia was advanced, we had occasion to conduct a series of experiments in order to verify the findings of the American physiologist. A paper[1] dealing with the results of these experiments was published in a French journal, but it appears to have remained entirely unknown to the American medical profession. Thinking that our past experience will now be of some value to other investigators, since all known factors bearing on the question of shock must be taken into consideration, we have decided to summarize briefly the most important observations noted in our former experiments.

There is no necessity for a detailed citation of Henderson's theory or a comprehensive discussion of the series of experiments from which he derived his conclusions, for it is well known that Henderson studied the effect of excessive artificial respiration on dogs which in many instances had the thorax open. These animals, after a period varying from one to three hours, presented a state identical to that condition known as surgical shock.

In experiments so conducted, there occurred the formation of accentuated acapnia, namely, there occurred a considerable reduction of the amount of carbon dioxid in the blood and also in the body tissues.

In his first work, Henderson designated the important part played by carbon dioxid as a hormone and after an extended and ingenious series of deductions, attributed to acapnia the responsibility for the production of the state of shock. One of the most remarkable points about his theory Henderson considers the fact that when artificial respiration is made in such a manner that the air already once breathed is immediately rebreathed, it becomes impossible to obtain shock. Now it is exactly under these conditions that it is impossible to have acapnia, notwithstanding excessive artificial respiration. Today Henderson holds his theory as fundamental and only admits little modifications of the details. Recent research has demonstrated the existence of a condition of acidosis in individuals suffering from shock. Henderson,[2] basing his views on modern revelations concerning the action of the ions of hydrogen, shows himself inclined to believe that this acidosis plays the part of a compensator of the acapnia, and it is able to produce the death of the individual through apnea excessively prolonged.

With Henderson, the question of knowing which of the two factors is primary, the acapnia or the acidosis, should be resolved in this connection by attributing the condition of acidosis to acapnia.

Our first experiments were intended only to verify that excessive artificial respiration actually produced a state of shock. This work was conducted in Rio de Janeiro, Brazil, during the summer of 1912. In numerous attempts, never was it possible to obtain anything that resembled the state of shock as described by Henderson. The artificial respiration was frequently prolonged for four or five hours or more, without the animals showing the slightest symptom that permitted us to think of it as being in a state of shock. In cases in which the thorax was not open, the animal, if taken from the operating table at the close of the experiment, continued to stand up or walked about, and showed itself to be perfectly conscious, although displaying unmistakable signs of great fatigue.

In the face of such negative results, it was immediately evident that there was present in these experiments a factor quite different from that encountered in the work of Henderson. A detailed examination of the equipment proved that it was quite the equivalent of that employed by Henderson.

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* Translated from the Portuguese manuscript, June 4, 1918, by Bartle T. Harvey, Rio de Janeiro, Brazil.

[1] De Almeida, A. O., and de Almeida, M. O.: Véritable cause du coma produit par la réspiration excessive et prolongée, Jour. de physiol. et de path. gén., 1913, **15**, 498.

[2] Henderson, Yandell; Prince, A. L., and Haggard, H. W.: Observation on Surgical Shock, The Journal A. M. A., Sept. 22, 1917, p. 965.

Therefore, only a foreign factor of importance could influence the results to such an extent. Furthermore, this unknown factor was easily discovered as being in the temperature and humidity of the air actually employed for respiration in the various experiments.

In Rio de Janeiro, the temperature of the air in summer frequently ranges from 32 to 34 C. (89.6 to 93.2 F.) during the day, and its percentage of humidity is always very high. Taking these conditions into consideration, we made the following hypotheses:

1. Excessive artificial respiration is able to produce different effects that vary in accordance with the character of the air employed.
2. The primary effect, already well known, is the formation of acapnia.
3. If the temperature and humidity of the air employed are high, there is no appreciable modification of the internal temperature of the animal.
4. If the temperature and humidity of the air employed are sufficiently low, a progressive internal cooling of the animal occurs.

In our experiments, there was evident formation of acapnia without the slightest change of the internal temperature of the animal, and, moreover, the state of shock did not occur.

The results already obtained seem sufficient to justify the conclusion that acapnia is not the cause of the state of shock that Henderson observed it to be. Then the thought occurred that if the artificial respiration was made with air having an approximate temperature of 18 C. (64.4 F.) and a percentage of humidity ranging from 30 to 40, the internal cooling of the animal would be sufficient to induce a state of coma. The importance of this question is significant when it is realized that the foregoing conditions of temperature and humidity are identical with those ordinarily encountered in the laboratories of the United States and Europe. As we did not know positively the particulars in this respect as to Henderson's experiments, it was permissible to suppose that these were approximately the conditions under which his investigations were conducted. Furthermore, if these conditions should prove sufficient to produce internal coooling of the animal up to the point of inducing coma, it would indicate that shock, as observed by Henderson was nothing more or less than this coma itself. A second series of experiments was directed along this line of investigation for the ostensible purpose of determining the truth of this supposition. Artificial respiration was applied with the same intensity as in the first series of experiments, but the temperature of the air was lowered to 18 C., and its humidity was reduced. The animals thus treated soon manifested a rapid fall of internal temperature, and this cooling process was carried to the point of producing a state of coma that terminated in death.

CONCLUSIONS

Without wishing to enlarge on the details of experiments already published, it is believed that the results of the experiments performed permit the following conclusions to be drawn:

1. Excessive and prolonged artificial respiration produces coma and death only when it is made with air having a sufficiently low temperature and humidity.
2. If the temperature and humidity of the air are sufficiently raised, the respiration may be prolonged indefinitely without obtaining this result.
3. Since the conditions described in the preceding paragraph produce strong acapnia, it is clear that this state has no relation to coma.
4. It was the coma resulting from the internal cooling of the animal that Henderson confused with a state of shock.
5. The continuous failure of Henderson to obtain what he thought was shock, when respiration was made with air already once breathed, proves that under such conditions it is impossible to obtain the internal cooling of the animal because expired air is saturated with moisture and has a relatively high temperature.

OCULAR HEADACHE *

J. W. CHARLES, M.D.
ST. LOUIS

The vagueness of the term headache leads the layman to describe almost any discomfort in the region of the eyes, which has no outstanding characteristic, as "headache." For example, reflex discomforts which bring the patient to the ophthalmologist for headache and which have no foundation in eye disease, such as errors of refraction, muscle imbalance, or a weak accommodation, are frequently caused by a conjunctivitis and are "cured" by lid treatment. Instances are seen in which pressure on the lids give instant, if only temporary, relief from this kind of "headache." These cases must be differentiated from those of deep pains in the eyes without redness, sometimes accompanied by headache, which make one suspicious of nasal sinus disease. These nerve reference pains in the eyes result most frequently from the ethmoids or the frontal sinus, and may be likened to the pain in the knee from hip joint disease.

While headaches from vision for distance alone sometimes occur in otherwise normal people who have ocular errors, these are much more often found when a strain is being forced on the eyes in near work. But headaches occur in so many persons who have only a slight error in refraction or a low degree of muscle imbalance as to force one to the conclusion that the eyes are acting only as an exciting cause which might not be at all effective, were the patient otherwise well and well balanced nervously. The result depends largely on the individual nervous system behind the eyes.

In 1907, Coggeshall and MacCoy[1] found from the study of 1,700 cases that "a neuropathic diathesis is an essential condition of the occurrence of almost all of the chronic headaches of the kind we are discussing," combined with some source of local irritation not otherwise manifested, often with an anemia or a toxemia; and frequently a combination of these causes occurs. The greater the one factor, the less need be

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* Read before the Section on Laryngology, Otology and Rhinology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

[1] Coggeshall, Frederick, and MacCoy, W. E.: Headache as a Symptom of Local Disorders, The Journal A. M. A., Jan. 4, 1908, p. 15.

the other. They also emphasized the fact that the local eye-strain may cause headache only when the patient is nervous from some other cause, for example, when the eye-strain headaches occur only at the time of the menstrual period. The deep dull headache from disease in the nasal sinuses may be combined with a muscle imbalance which is itself a reflex of the sinus inflammation. Or the occipital cases due to uterine or ovarian trouble may be aggravated by a muscle imbalance which is increased by the pelvic disease (Coggeshall and MacCoy).

The vicious circle of high blood pressure and pain may be observed in ocular headaches combined especially with the vascular hypertension caused by nervous contraction of arterioles. One of the finger-posts toward diagnosis in these cases is the surprisingly ready relief which often follows complete rest in bed, which does not so promptly reduce hypertension in organic vascular disease. Patients suffering from high blood pressure alone frequently consult the ophthalmologist for headache and discomfort in reading. No amount of change in the glasses will bring relief; and it becomes very difficult to convince such a person that it is necessary to consult an internist, even when one sees the characteristic changes of arteriosclerosis in the ocular fundi. Usually these hypertension headaches are accompanied by a congestion of the conjunctiva, the treatment of which brings comfort. It is therefore no longer proper to tell the patient seeking relief from headache that glasses alone will cure, simply because there is sufficient error in refraction to cause headache; but rather to explain that the ocular error may be only one factor, and to indicate to him the likely direction toward diagnosis and treatment. He is justified in expecting, in addition to specialism's investigation, medical advice and the inauguration of a medical campaign against his discomfort.

EYE-STRAIN

On the other hand, we know positively that there is a large proportion of headache which is caused by eye-strain alone. G. L. Walton[2] concluded from his statistics that "66 per cent. of patients totally blind from infancy were free from headache." Thirty-one per cent. of seeing patients were free and 29 per cent. with partial or acquired blindness were free. That is, about one half of all headaches are caused by eye-strain. He forever laid to rest the theory that migraine was always to be referred to ocular strain by the assertion that some of the totally blind have migraine, showing that eye-strain cannot be its only cause. Still the alleviation of some cases by glasses indicates that the need of correction of the refraction is sometimes an exciting, or rather, an aggravating, cause.

The headaches caused by ocular errors alone result from a defect in the shape of the eye itself, most frequently manifested by hypermetropia and astigmatism or their combination; from an imbalance of the extrinsic ocular muscles; or from a spasm of accommodation or a strain of the ciliary muscle caused by overuse (frequently during periods of systemic stress as, for example, reading after illness, confinement or a surgical operation).

HYPERMETROPIA AND ASTIGMATISM

The degree of hypermetropia and astigmatism causing headaches is so varying that many high degrees of error cause no discomfort because the patient makes no attempt to obtain clear vision, and therefore there is no great strain on the accommodation, while many low degrees of departure from the normal shape may cause great pain from the effort to see—even more than is normal in certain cases. The American nervous system seems to require a more refined correction even among the lower classes than that of any other nationality. I remember in the clinic of Voelkers at Kiel, a gross error of something like a hypermetropia of three diopters and an astigmatism of equal amount which I had been at great pains to discover. Prof. Voelkers remarked, "Do not bother about the astigmatism. These stupid people cannot make such fine distinctions."

But there are no rules without great and many exceptions in the results of refractive error. A school-teacher came to me in the nineties, complaining of severe headache. One eye converged. When I gave her full correction of a very high hypermetropia, her headache was relieved but her muscle-balance was disturbed in the other direction and the eye diverged, producing a marked deformity. She was nervous and very much displeased until after a reduction in the strength of the glasses and a tonic course of pilocarpin instillations which brought relief from both conditions: but I was never able to prescribe a full correction. I believe that now I should have given her a full correction and then a muscle operation for the deformity later.

IMBALANCE

The question of imbalance of the ocular muscles is complex and the conditions vary so much with the general health of the patient that again one cannot give a definite list of characteristics in the headaches caused therefrom. "In general, frontal headache, perhaps eyeache, combined with slight or great vertigo, nausea, mental confusion, depending on the degree of muscle error and especially in the absence of refractive error, makes one suspicious of insufficiency of an extrinsic muscle which under fatigue may even cause diplopia" (Bull).

A man, aged 31, came to me in 1908 with a history of frontal headaches at times for two years, which had become daily and constant throughout his waking hours for one year, except when he took headache powders. His refractive error was so slight that he was given an addition to his glasses of prisms of 5°+5° bases out for an esophoria. With these he read with ease and his morning headaches disappeared with their use each day. In five days he remarked, "This is the first Sunday in my memory when I could read the entire paper without a headache." He was advised to take regular exercise with an instructor in a gymnasium, the prisms were gradually reduced to 2°+2°, and four years afterward he still worked with comfort without need of a change of glasses.

While actual headache is more infrequent in myopia, it is not too much of a digression to point out that there is a certain mental discomfort connected with the attempt to see, especially in the neurotic myope, which is closely akin to headache. The desire to avoid the appearance of stupidity results in too tense a concentration, which in turn brings on headaches. Another cause of asthenopia, as well as of headache is the half closure of the lids, which results in pressure on the cornea, over the pupil, by the lid margin, which may even cause an actual dent in the epithelium. Bull of Paris demonstrated this occurrence to me after observing it in the eyes of artists who half close their eyes in painting, for the purpose of giving the effect of distance and color values (alinement).

This probably explains some of the discomforts of sitting in the galleries of concert-halls as well as some of the asthenopias with headaches caused by reading in bed. The sequence of events seems to be pressure on the sensitive nerves of the cornea, constantly maintained over the pupil, with reflex spasm of the ciliary muscle, headache and chronic congestion of the conjunctiva.

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[2] Walton, G. L.: Boston Med. and Surg. Jour., June, 1905.

While the full correction of a patient's refractive error can be obtained only under a cycloplegic, it very frequently happens that one may not force such strong lenses on the patient immediately. The muscle of accommodation, having been accustomed to make a certain effort for a certain piece of work or distance (of focus), seems to resent assistance by glasses and becomes spasmodic instead of relaxing as we hoped it would do. The effort plus the glass makes a blur and the patient must be given a partial correction for a time in order to avoid another vicious circle of blur, spasm and headache.

STRAIN OF CILIARY MUSCLE

There is a well known form of ocular discomfort with headache which is occasionally observed in patients whose eyes are shaped normally and whose extrinsic muscles are properly balanced, yet the use of the eyes in all near work becomes impossible without the greatest discomfort, which may amount to actual pain in the eyes and head. A strain of the ciliary muscle has occurred when the patient was in a weakened general condition. He would not think of using his arm or leg muscles or his back in lifting weights for fear of strain, but he does not hesitate to attempt the muscular act of accommodation when he is too weak to do anything else. Because he is bored to death, he reads everything in sight.

Therefore the ciliary muscle is subjected to an outrageous amount of abuse, and I believe that the most obstinate trouble we have to treat is a strain of the accommodation. Glasses do not relieve and nothing will restore but complete rest, followed by very gradual resumption of exercise. Complete rest may be obtained only by the use of a cycloplegic because every act of seeing may be accompanied by the use of the ciliary muscle. These cases of painful accommodation are sometimes very puzzling and the patients go from one to another ophthalmologist under the belief that if they could only find the correct glasses, they would become comfortable at once.

This question of painful accommodation, with or without an error in the shape of the eye, is one not lightly to be regarded. The patient may be perfectly and indefinitely comfortable in vision for distance, yet cannot read or sew or embroider without pain in the eyes which often extends to neighboring regions. I believe that there are two distinct causes: (1) a strained ciliary muscle described in the preceding paragraph, and (2) reflexes from focal irritations or inflammations, the most frequent of which are nasal. When we have no history of strain preceding either painful accommodation or ciliary spasm, we cannot avoid the thought that many of these cases are reflex. I remember that when Dr. Sluder and Dr. Ewing began their investigation of frontal and ethmoidal headaches, many of the patients complained of great pain in near work. Dr. Andrews of Chicago has recently emphasized the fact of the reflex path from the nasal mucosa by means of sensory fibers to the sphenopalatine ganglion, the interganglion fibers to the ciliary ganglion, from which arise the motor fibers to the ciliary muscle.

"HEADACHE HABIT" AND "HABIT HEADACHE"

The term "headache habit" is used to designate that condition of the nervous system wherein, after the removal of the principal cause, the patient continues to suffer either constantly, yet in diminishing degree, or interruptedly, with the intervals between attacks becoming wider until there is no more trouble. When glasses have been prescribed, the pain does not subside forever and, although the patient may return in a few days highly satisfied with the new conditions, he still later announces that he had a severe attack the day before, often "the worst I have ever had," due, I suppose, to the contrast between the pain of the relapse and the recent freedom from discomfort. The patient and the physician feel that some remedial measure has been left untried.

Dr. Sluder has observed somewhat the same occurrence after the clearing out of a sinus. Congested nerves and poisoned centers do not always respond immediately to treatment even by glasses, and the physician must counsel patience. In this connection also must be mentioned the "habit headache," which means that the person who has been accustomed to suffer at a given time every day or week may have a tendency to returns at such times after correction has been made, especially when the most onerous burdens come at a special time of day in the life of the patient. This type must, of course, be differentiated from the "psychical recurrent morning pains of frontal sinus suppuration, which was once called sun-pain and supposed to be malarial"; and also from the "psychical nocturnal sphenoidal pains," which are self-evidently another entity (Sluder).

VALUE OF THE FIELD OF VISION

The value of the field of vision to the ophthalmologist in cases of headache is rather negative, in that it is used largely to diagnosticate causes from other sources, rhinologic or neurologic. But in these cases it is often of immense value as an indicator. Indeed a neurologic friend goes so far as to say that no headache should be allowed to go without an investigation of the fields, and to a certain extent he is correct, except that if a field were taken in every case of headache which comes to the ophthalmologist, his entire twenty-four hours would be occupied. There is, however, no doubt that when a headache is accompanied by any evidence of optic nerve involvement (an enlargement of the normal blind spot, for example, leads one to suspect sphenoidal or ethmoidal trouble), also when a headache eludes all other diagnostic methods, it is important to go into the subject of the fields more frequently than is usually done. In this connection, I do not believe that a simple field for form or white is of any value whatever in the diagnosis of beginning nerve involvement. In fact, white is not invaded as a rule until the damage is likely to have been done. In nerve inflammations or atrophies, the order of loss is first a narrowing of the green field, followed by a narrowing of the red, blue and yellow, and finally loss of form.

ABSTRACT OF DISCUSSION

Dr. William W. Pearson, Des Moines, Iowa: We can all recall cases like those cited, when we have wondered if it could be possible to find any symptoms anywhere. The doctor has pointed out the cases of weakness and fatigue following long continued illness. So often patients tell us that their headaches followed a major surgical operation, and that they have taken up their eye work at a time when they were absolutely unable to use any other muscles in the body. Surgeons are at fault in not warning patients to refrain from using their eyes during this period. We should all bear in mind that factor of which Dr. Charles spoke with relation to patients whose clear field of vision fails. A few years since a very extensive article appeared in an English journal in regard to the restriction of the field of vision in sinus trouble. It was a good deal along the line of the doctor's paper. One cause that is referred to occasionally in the literature is that of the lid pressure on the globe. I am glad the doctor brought that out. In some individuals who visit the moving picture shows you will notice that their lids are more or less drooped, and you can readily understand how a condition that gives trouble will arise. I am confident that many of these cases are overlooked—headaches resulting from that lid pressure.

Dr. Oscar Wilkinson, Washington, D. C.: One particular form of headache might have been mentioned in connection with Dr. Patrick's paper, but it comes in well with this one. For a number of years I have noticed that basilar headache may be associated with imbalance of the extrinsic ocular muscle, particularly in the exophorias and at times in the hyperphorias. This ocular headache, unlike that spoken of by Dr. Patrick, is not associated with tenderness or with a general infection of the system. It is very frequently, and practically always, associated with the neurotic type of individual with from one to five degrees of exophoria or one to three degrees of hyperphoria. This type of ocular headache is especially associated with neurasthenia. These patients suffer from headache usually the day following severe strain on the eyes; for instance, they wake up in the morning with it. In that respect it must be differentiated from the syphilitic headaches. It is well known that the syphilitic headache is a basilar headache which comes on early in the morning. This headache comes on later than the syphilitic headache and is very often the result of extensive ocular strain.

Dr. Frank Allport, Chicago: This discussion concerns headaches dependent on ocular conditions only. Of course, headaches may arise from other conditions, and I always investigate patients with headaches from all possible angles. If necessary, such patients are referred to general practitioners, neurologists, gynecologists, nose and throat specialists, etc., but I am frequently compelled to limit the cause of the headache to the eye. Headaches are often produced from refractive errors, and especially from astigmatic condition, and more particularly some form of irregular astigmatism. These conditions must, of course, be corrected by glasses, and, when the age of the patient does not prevent, the refractive error should be corrected under the influence of a mydriatic.

Many headaches are produced from instability of the extrinsic ocular muscle, and Dr. Charles advocates the wearing of prisms for such conditions. I do not wish to be understood as saying that prisms should never be worn, but I am convinced that it is a grave error to prescribe them except under very exceptional conditions. A prism is like a crutch—the patient becomes dependent on it, and under its influence the muscle becomes weaker instead of stronger and then stronger prisms must be prescribed. I very much prefer what is known as prism exercise—that is, the exercising or strengthening of certain sets of muscles by prism exercise for a few minutes at a time each day. This almost invariably enhances the power of weak muscles and overcomes the muscular instability and renders the use of prisms in spectacle frames entirely unnecessary.

Dr. Joseph W. Charles, St. Louis: Dr. Pearson spoke of the effect of lid pressure. It is easily explainable. Even one fiber of cotton may cause a lid reflex in testing. The reflex path in these cases of asthenopia caused by lid pressure will be through the long ciliary nerves, through the nasal nerve, through its short root to the ciliary ganglion, the motor fibers from which supply the ciliary muscle. Pressure on the cornea may thus cause spasm of the ciliary muscle. I agree with Dr. Allport in everything he has said about prisms. I think that they have not only been greatly overrated but have done a great deal of damage. The case which I mentioned was an exception. It could not be relieved by any other method; but I do believe in prism exercises.

There is one fact that should be noted in this subject of muscle imbalance. Theobald taught us that a patient may have no imbalance for distance, yet at the reading distance show a decided weakness. He laid down as a general rule that a discrepancy of more than 4 degrees indicated the need of correction or treatment.

TUBERCULOUS EFFUSION, TRAUMATIC IN ORIGIN *

H. A. BRAY, M.D.
RAY BROOK, N. Y.

The case here recorded illustrates the reawakening by trauma of a previous benign tuberculous pleurisy in an apparently healthy person. It also tends to confirm clinically recent experiments on pigs in regard to the pleural reaction in tuberculosis.

REPORT OF CASE

History.—Mrs. L., aged 36, married, housewife, is a large robust woman, weighing 185 pounds. The paternal grandmother, mother and one brother died of pulmonary tuberculosis, and the patient was definitely exposed to this disease for a period of years during childhood. Otherwise the family history is unimportant.

Since the age of 16 she has had repeated attacks of quinsy, and for some years past during the winter months has suffered from recurring attacks of bronchitis.

In 1912, three years previous to the present illness, the patient came to me complaining of pelvic discomfort due to prolapsus uteri. At this time an examination of the chest, suggested by the tuberculous history, revealed a pleuritic patch about the size of the palm of the hand, palpable as well as audible at the base of the right lung posteriorly. Otherwise nothing noteworthy was discovered in the chest. The patient could not recall having had pain or other symptoms referable to this region, and the lesion is of unknown duration. Five subsequent examinations during the next three years, the last, three months previous to the present illness, showed practically no change in the physical signs associated with the pleurisy at the base.

Present Illness.—The onset dates from a wrench of the chest muscles, Aug. 15, 1915, while the patient was in the act of rescuing her small child from drowning. The story of the injury is as follows: Hearing the child's cries for help, she rushed to the stream, stepped from the bank to a projecting rock, and, clutching an overhanging branch with her left hand for support, leaned forward and with the other lifted the child from the water. At this time she felt something within her chest "suddenly give way with a distinct snap," followed by a severe pain at the base of the right lung over the site of the latent pleurisy. It was with considerable difficulty that she returned to the house. The pain grew worse, and that evening she was unable to lie on her right side and was quite short of breath. The pain persisted; she gradually grew weaker, was feverish, and on the tenth day a severe chill sent her to bed. I saw the patient at this time. She was acutely ill, was suffering from severe pain in the chest and had lost considerable in weight. The temperature was 103; pulse, 128; respiration, 32. The physical signs indicated fluid at the base of the right lung extending approximately to the lower angle of the scapula. Otherwise the physical examination was negative. The roentgenograms confirmed the physical findings in all essential details.

The fluid accumulated rapidly, finally occupying the lower two thirds of the chest. Nine hundred and fifty c.c. of clear, straw-colored fluid were removed by paracentesis. Stained specimens showed numerous acid-fast bacilli. Animals inoculated with the fluid developed a typical generalized tuberculosis. The diagnosis, therefore, was tuberculous pleurisy.

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* From The New York State Hospital for the Treatment of Incipient Pulmonary Tuberculosis.

The patient was ill for about eight months, suffering from a more or less continuous toxemia and losing 40 pounds in weight. The prognosis for a time was distinctly unfavorable. Convalescence then set in. The effusion was absorbed rapidly, and in a few months the patient had fully regained her former state of vigorous health, which has continued to date, a period of approximately two years. The physical examination and roentgenograms one year after recovery failed to reveal evidence of a pleuritic lesion. The fluoroscope showed a slight decrease and retardation in the excursion of the right leaf of the diaphragm.

COMMENT

In apparently healthy persons the development of a tuberculous effusion following trauma of the thorax is usually thus explained: A latent or healed tuberculous focus of the pleura prior to the injury is assumed, except in those instances in which the bacilli gain access to the tissues through an abrasion or wound at the time of the injury. Pathologic studies have demonstrated the frequency of latent foci of the pleura in persons dying of causes other than tuberculosis. It has also been shown that these healed foci may, and often do, harbor living and virulent tubercle bacilli. It is supposed that the trauma causes a rupture of the fibrous capsule about the focus, and that living tubercle bacilli and their products then escape through the tear into the pleural sac. The extent of the effusion and the rapidity with which it develops depend on the number, virulence and distribution of the tubercle bacilli over the pleural surface, and on the allergic state of this tissue.

The clinical data in support of this theory, so far as I have reviewed the literature, is not conclusive. In the recorded cases, the tuberculous focus was not detected prior to the injury, but its presence assumed after detection of the effusion. Furthermore, the time interval between the trauma and the recognition of the effusion in most instances was sufficiently long to admit of the possibility of other causative factors.

These criticisms are not applicable to the present case, since a latent focus of the pleura was recognized several years previous to the injury, and its reawakening by trauma was apparently established from the clinical notes submitted.

At the time of the injury the patient was stooping forward, the left hand raised slightly above the body grasping a limb for support, and the other stretched forward lifting the child (55 pounds in weight) from the water. This effort imposed a severe strain on the muscles of the back, especially those of the right side, and no doubt resulted in the tearing of pleural adhesions, which would account for the sudden and severe pain in the chest. As tubercle bacilli were discovered in the effusion, one may assume that with the tearing of the pleural adhesions, tubercle bacilli were liberated and distributed over a greater or less area of the pleural surface. This was followed by an acute inflammation with rapid accumulation of fluid.

The case, therefore, is of interest in giving added support to our ideas regarding the development in apparently healthy persons of a tuberculous effusion following trauma. It also tends to confirm clinically Paterson's[1] experimental observations as to the possible recovery of the pleura in guinea-pigs from a marked tuberculous involvement. Furthermore, the realization of the untoward results that may follow a wrench of the chest muscles, and the fact that a well established tuberculous effusion does not necessarily mean permanent disability, is important from a medicolegal standpoint. Finally, as tuberculous effusion following trauma is not uncommon, the detection of benign lesions of the pleura should receive careful consideration before accepting men for active military service because of their frequent exposure to injury and the possibility of reactivating lesions of this nature.

OBSERVATIONS ON THREE CASES OF SCURVY

VILHJÁLMUR STEFÁNSSON
NEW YORK

The winter of 1916-1917 was passed in Melville Island by seventeen members of the Canadian Arctic Expedition. The expedition vessel, the *Polar Bear*, had failed to reach the island and we expected to live the winter entirely on fresh or dried musk-ox, reindeer, seal and bear meat. During the darkness of winter, however, our sleds got their steel shoeing worn out through a traveling party getting lost among some rocky hills where the sleds had to be dragged scores of miles, mainly over rock. This necessitated my sending a party in midwinter to Winter Harbor on the same island (where in the past several vessels have wintered) to see if they could find abandoned iron or steel and shoe the sleds for the spring work. Some of our people made another trip to the same place during the winter for a different purpose.

At Winter Harbor our men found, besides the metal and other repair materials wanted, several tons of food, kerosene, etc., cached there in 1910 by Captain Bernier, then in the Canadian government service. It was against my judgment, because of fear of scurvy and because of trouble in freighting the food, to use any considerable quantity of these edibles at our winter camp; but the men had an idea that the cached foods were much preferable to meat, and so I allowed them to eat all they wanted of these groceries while at Winter Harbor, though the amount hauled to the base camp and eaten there was less than three full meals per week—one full meal per week would be nearer the actual fact.

The main items of food found at Winter Harbor were flour, salt pork, butter, honey, sugar, pilot bread, preserved fruit in glass containers, pemmican, meat extract, dried fruit, rice, beans and peas. So far as we could judge, all of this food was in perfect condition except the pork and the sugar. Much of the brine had leaked out of the pork barrels, and as they were above the sugar, some of the brine had permeated most of the sugar so that the taste of it ranged from barely perceptible saltiness when used in tea to saltiness that made the sugar disagreeable no matter how used. There may have been a little sugar unaffected. The pemmican was salted to be palatable to the ordinary eater; the meat extract seemed to consist in considerable part of rock salt, some of the particles nearly the size of a split pea. There was also some salt which those of the men who cared for it used with the fresh meat.

On account of their greater portability, I decided to use the groceries found at Winter Harbor along with dried meat and fat on the sledge exploration of the spring of 1917. The dried meat yields to no food in portability if used with the right amount of tallow, but as we had to feed some fifty dogs on it as well as the men we were short and should have had to use half dried or green meat in part had we not found the cached groceries. I did not fear scurvy from this use of the groceries, as I expected the men to eat mainly fresh meat all winter and we would have some seal meat on the ice in the spring. But I reckoned without the fact that some of our men had the belief that a varied diet is necessary for health. That phrase may be all right if properly understood; but certainly it is not only untrue as commonly understood by laymen but dangerous when applied on polar expeditions by the ordinary cook or even by that type of doctors who inherit their views of scurvy and antiscorbutics from Captain Cook's voyages. On this point witness the prevalent scurvy of the carefully groomed, dieted and medically supervised Scott expeditions and the absence of it on the (dietetically) apparently haphazard expeditions of Peary and Shackleton.

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[1] Paterson, R. C.: Pleural Reaction to Inoculation with Tubercle Bacilli in Vaccinated and Normal Guinea-Pigs, Am. Rev. Tuberc., 1917, 1, 353.

Of the five men who went to Winter Harbor in midwinter and there lived for several weeks mainly on the diet given above (the cached stores), three were afterward transferred to parties that lived in considerable part on fresh meat through February and March, and none of them ever contracted scurvy. The other two worked at freighting the groceries to the north coast of Melville Island and (I later learned) ate fresh meat rarely and as only one item of their meals. They also used salt extensively both as direct seasoning and in the form of beef tea from the meat extract. Both these got scurvy late in March or in April. No one else of the seventeen in Melville Island had any symptom of scurvy.

In March, our Melville Island party was joined by Lorne Knight, who had wintered with the *Polar Bear* in Victoria Island and whose diet had been mainly groceries of the ordinary kind, with a little fresh meat now and then, cooked in the ordinary white man's way.

After Knight joined our party, it was subdivided into two sections traveling one behind the other on the same trail, a few days apart. In the advance party were Aarnout Castel (in command), Karl Andersen, Lorne Knight, Harold Noice and one Eskimo; I learned later that the diet of this party had been mainly rice, pilot bread, pemmican, meat extract, sugar (salty), honey and a little fresh meat, cooked. The Eskimo, in addition, occasionally ate some raw fresh meat kept for dog feed. Castel ate the salty, cooked food, but he had previous to taking command of this party lived nearly exclusively on meat all winter, some of it eaten raw and little salt used. He and the Eskimo never acquired scurvy. The second party, that traveled behind, had a diet differing from the first in less use of salt and more of meat, both cooked and raw. No one in that section developed scurvy at any time.

Early in April, Andersen, when my party caught up to the advanced section, complained to me of having been gradually becoming more unwell for a week or two. The first symptom noted by him was dizziness on suddenly standing up, "laziness," gloom and irritability, showing itself in a tendency to condemnatory and uncalled for argumentativeness, proneness to becoming tired, and loosening of the teeth and a swelling and recession of the gums, with a dull, local ache in the gums or roots of the teeth. The appetite was normal as to both quantity and kind of food desired except that there was an increased aversion to frozen, raw meat—occasionally eaten by most of us in the form especially of frozen liver, a dish few persons can try several times without acquiring a liking. I told Andersen at once that the case looked like scurvy to me, but I added, "It can't be, for you have lived on fresh meat most of the winter." To this he replied, "No, sir, it can't be"—a dutiful reply, but not enlightening. So I decided the gum condition to be pyorrhea alveolaris, and we acted accordingly. I sent Andersen south with the first returning support party going toward our base at Cape Kellett, Banks Island.

I learned later that on the way south Andersen's symptoms continued to develop along the same lines, and he lost gradually in strength. On reaching Melville Island, the party failed to find food at an expected rendezvous, and for two or three days they had been on short rations, arriving without food at a place where several musk-oxen had been killed and one left behind unskinned and intended for dog feed. The coat of this animal is so warm that in the coldest weather of winter, decay for several days proceeds on the basis of the body heat before being arrested by frost. This animal was therefore very "rotten," but the party was hungry and promptly devoured considerable of the frozen meat. All men who know the two methods prefer very high meat raw and frozen to the same meat cooked, and so our party ate most of their food raw for some days. Andersen told me the following summer that after three days of the raw meat he was completely over his abnormal gloom, felt eager to exert himself (as exemplified by a willingness to get up in the mornings, whereas he had formerly to "drag himself out of bed"), he could stand up suddenly without dizziness; and a soreness and stiffness of the joints, lately a prominent symptom, had disappeared. All this had occurred in three days. On a continued diet of meat, sometimes raw, sometimes cooked, but always fresh after the first four or five days, he continued to improve. His full strength came back in two weeks and his gums were firm and his teeth fast in a month. No salt was used, for they had run out of it.

In complete ignorance of the progress of Andersen's disease and of his recovery, my own party proceeded out on the moving sea ice and to a point 140 miles from land. Here scurvy, this time promptly recognized, laid hold of two of my three companions, Knight and Noice. What helped me to a quick decision as to what the trouble was was Noice's telling me that at times, when they were working separated from me, they had eaten practically no fresh meat for a considerable part of the winter, and had been eating everything heavily salted, partly (apparently) as a protest against what they considered my unreasonable instructions that meat should be the main item of diet and salt used sparingly, though both "white men's food" and salt had been found at Winter Harbor.

Noice, who had been on the Winter Harbor diet, and Knight, who had been on the ship's diet, had about the same symptoms, and these were the same as in Andersen's case. Noice's disease, however, was about a week farther advanced than Knight's. We at once started for land, for seals were scarce where we were, and fresh meat not available. I ceased using any salt or salty food, and for the first week of the journey shoreward the symptoms remained about at a standstill. After that, however, the disease made progress again. The diet at this time was hard bread, rice, pea meal, honey, sugar and casein. What fat we had we used for the dogs.

Before reaching shore, Noice had become unable to walk and had to be hauled on the sleds; Knight was able to walk, but was getting weaker and more wretched. On landing on Ellef Ringnes Island, I at once went inland in search of caribou, the others traveling along the coast to keep abreast of me. On the second day, fourteen caribou were killed, and we pitched camp at the place.

At this time the teeth of both men were so loose that they could be plucked out with the fingers with no effort, and the gums were of such a cheeselike consistency that they were cut (with little bleeding) by wooden toothpicks about as easily as ordinary "American" cheese could be. Every joint was sore and all movements painful, and there was a gloom which, both men later agreed, could not have been caused by mere worry over their danger—we were 700 miles from our vessels and 600 from the nearest Eskimos. There was a marked craving for salt, in consequence of which I threw away a pound of salt we had with us and a little remaining meat extract, to prevent the men eating them surreptitiously. Appetite and digestion seemed normal, except that there were the abovementioned craving for salt and a pronounced distaste for raw meat—greater distaste than ordinarily. I now put them on this diet: In the morning a potful of meat was boiled, without salt, in enough water to supply drinking needs all day. The boiled meat was all consumed at breakfast, and when they were hungry enough (which was soon), raw frozen meat was eaten as often as desired the rest of the day. This meant that from half to two thirds of the meat was eaten raw. Marrow was also eaten raw.

In three days of this diet both men felt as cheerful as normal, and instead of the previous disinclination to stir there was a desire for activity surprising in view of the weakness from which they had not yet recovered. The pain in the joints was nearly gone, the craving for salt was markedly less, and the appetite for raw meat was much improved. In fourteen days from the first meal of meat, both men were able to walk, and we started south. In another two weeks their teeth were secure and the gums hard, though they did not, of course, regain their former apposition or contours.

All these men have been traveling all winter, having exercise that amounted to hard work, and fresh air night and day. None of them took a bath shortly before, during or immediately after their illness.

I have found among medical practitioners in Alaska that, with the prejudice in favor of fruit and vegetables as antiscorbutics inherited from Captain Cook's interesting observations, they have neglected meat as a preventive and curative agent in general throughout the territory. This led to many uncalled-for deaths while vegetables were as yet not readily obtainable. Fresh meat and fish always have been readily obtainable in most places.

Apart from some cases of scurvy that I dealt with in an article published last May,[1] I have seen in addition to the foregoing case only my own. I knew in advance I was likely to get scurvy during the winter of 1917-1918 if I continued on the diet forced on me by local conditions in the Mackenzie delta, where I was buying dogs, but I intended to counteract this by a prompt change to a meat or fish diet as soon as that task was done. But just then I was taken with typhoid, followed by pneumonia and pleurisy; and the diet approved and forced on me by those under whose charge I was while extremely ill was one by no means calculated to counteract scurvy—ordinary canned milk. But as this case, both in its cause and cure, differs markedly from the foregoing, I shall decide that space does not warrant my including a full account of it here.

CONCLUSIONS

The present article, together with the one just mentioned, and considerable material gathered but not published, makes clear some conclusions and suggests others. While these may not be exactly new, it is to be judged by the confused nature of many medical works still in use for reference by physicians that further testimony would not be amiss.

It seems, then, that:

1. The strongest antiscorbutic qualities reside in certain fresh foods and diminish or disappear with storage by any of the common methods of preservation—canning, pickling, drying, etc. Fresh tomatoes may be valuable (I have never tried them), but canned tomatoes are of little or no value; fresh potatoes are good, but desiccated potatoes have shown little or no adequacy in our expedition when tried in my absence by believers in that form of diet; the juice just expressed from the fresh lime is said to be excellent, and I have no reason to doubt it; but bottled lime juice has never yet prevented scurvy. (I have just recently gathered interesting but scarcely needed testimony on this point from the Royal N. W. Mounted Police as to the scurvy winter of 1898-1899 at Dawson).

2. Cooking lessens or destroys the antiscorbutic value of most or all foods. Three average raw potatoes are commonly said by miners definitely to turn the tide of scurvy that has not reached an extreme stage; in our own expedition, boiled and roasted fresh bear meat did not relieve scurvy except with such slowness that it is debatable just what its effect was, if any. Our party and persons known to me have had the same experience with venison. I am of the opinion that most men, if left to their own inclinations and supplied with abundant cooked, fresh meat will avoid scurvy; cooked meat acts but slowly on an advanced case—the efficiency of it depending probably on the "rareness" of the cooked meat.

3. Meat and fish slightly or well advanced in the process of ordinary putrefaction seems to be as good an antiscorbutic as fresh flesh, or nearly so—witness Andersen's case above and the well-known fact that Eskimo tribes often live for several months in succession on putrid meat or fish without ever developing scurvy, while Eskimos working for white men or living on purchased provisions have it quite as readily as Europeans living on the same sort of diet.

4. Bodily cleanliness and ventilation are not by any facts known to me shown to have any bearing on the incidence or severity of scurvy. Here it is instructive to compare the filth and good health of Nansen and Johansen, as described in "Farthest North," with the

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[1] Stefánsson, Villhjálmur: Original Observations on Scurvy and My Opinion of the Medical Profession, Med. Rev. of Rev., 1918, 24, 257.

immaculate Scott expeditions with their numerous and serious scurvy cases.

5. Exercise does not prevent scurvy. I have been told, verbally, that the Scott party had it on the return from the pole, after months of continuous and strenuous work in the purest of pure air and in abundant, continuous sunshine; while Nansen and Johansen were in perfect health after a winter of the most nearly absolute inactivity ever known to me to have been described in a book of travel. These are not isolated but typical instances.

6. Salt, while not proved by anything I know to be a cause of scurvy, probably has some direct bearing on the history of the disease, for the following reasons: (*a*) Salt meats have long been recognized (and probably rightly) as predisposing to scurvy. (*b*) Many observers have commented on the hankering for salt by scurvy patients and on the disappearance of the longing as the cure proceeds.

Neither am I certain that salt did not cooperate with the heat in lessening the antiscorbutic value of the meat used by four of our eight scurvy patients. The only death and the only long and dragging recoveries were of men who ate their meat cooked and salted during or after cooking. This was at the winter camps which, while they belonged to our expedition, were not at the time under my personal observance, and I have the stories on hearsay.

7. It is a mistake to think (with most laymen and many physicians) that blackening the skin of the leg and softening of the calf muscles are among the early symptoms in nearly all cases. I have never seen either symptom, and in the cases I have heard of from reliable observers these symptoms, if they appeared, appeared late in the disease. Dizziness on standing up and bleeding from the gums are commonly among the earliest symptoms noted by the sick man himself, though it may be right that careful tests would disclose other symptoms earlier.

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In the routine practice of ophthalmology when patients present themselves with extra-ocular muscle paralyses which have developed suddenly, one is inclined to be content with inferring probable syphilitic etiology or some toxic cause, in case there is no history of traumatism. This habit of practice has led too often to the neglect of a careful search for a definite underlying cause and a definite pathologic lesion.

There are many conditions that may be responsible for paralysis or paresis of the third, fourth and sixth cranial nerves, and the whole subject is full of interest; but I wish at this time to call attention definitely to paralyses of a single nerve, namely, the abducens, which occur rarely but unmistakably in the course of purulent otitis media.

In 1904, Gradenigo[1] described a symptom complex which is now known as Gradenigo's syndrome or triad. It is characterized by (*a*) acute otitis media (with or without external suppuration, and with or without mastoid reaction); (*b*) isolated paralysis or paresis of the abducens nerve of the side corresponding to the diseased ear, and (*c*) intense and extraordinarily persistent pain localized, not as ordinarily in the mastoid region, but in the frontal, temporal and parietal regions of the same side.

The following case is a clean-cut example of the type:

M. W. S., aged 11, a thin and rapidly growing girl, called at my office, June 9, 1917. Two years before she had been a victim of mastoiditis on the left side and the mastoid was successfully operated on by Dr. John D. Richards. For the last six weeks she had had a running ear on the right side and was being treated conservatively by Dr. Philip D. Kerrison. The child was brought to me on account of double vision, which she overcame by closing the right eye, and very severe pain in the right side of the head, which was most intense over the right eye. Examination revealed complete paralysis of the right external rectus. Gradenigo's syndrome was clearly exemplified, and the condition was reported to Dr. Kerrison, who thought best to perform the mastoid operation. Two days after the patient visited me, the mastoid was cleaned out and it was found to be of the pneumatic type; but nothing unusual was found in spite of careful search for a lead to the sixth cranial nerve. The next day after operation there was decided improvement in the diplopia, and on the third day the diplopia and the pain had entirely disappeared, not to return again. I saw this patient last, Dec. 8, 1917, and at that time the muscles were in balance, and the tropometer showed normal rotations.

Recognition of the symptom group is found in otologic literature by the detailed reports of numerous cases which adhere more or less closely to the definite Gradenigo type; but case reports in eye literature are few, and there is surprisingly inadequate reference to the association of isolated sixth nerve paralysis with otitis in our textbooks and journals, and one is led to believe that the importance of this association has been rather generally overlooked by ophthalmologists. Knapp,[2] in 1908, reported a well-defined case:

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* Read before the Section on Ophthalmology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

[1] Gradenigo: Tr. Cong. de Bordeaux, 1904.

E. B., girl, aged 5 years, a well developed and previously healthy child, after an attack of grip, suffered from headaches and pain in the right ear. This persisted for two weeks and was associated with unusually severe pain in the right half of the face and in the right eye. The gums on the right side of the mouth were so sore that she could not chew. The mother then noticed that the right eye turned in.

Feb. 29, 1908, the right eye was in a convergent position. There was no outward motility beyond the middle line. There was homonymous diplopia. Vision was normal. Sensibility was unchanged. There was no history nor sign of herpes. The field was normal. The right eardrum was red, verging to white, was slightly bulging, and there was no perforation. As there was no pain and the ear condition was on the way to recovery, no paracentesis was done. The child was kept quiet; a hot-water bag and calomel in small doses were prescribed.

March 17, the general condition was much better. The eardrum was nearly normal. The ocular paralysis was unchanged.

March 25, the right eye could be turned outward 20 degrees.

April 8, there was motility not quite to the external canthus; there was homonymous diplopia.

May 14, motility was normal. There was no diplopia. There was an intercurrent attack of headache and earache, but no return of the ocular paralysis.

June 11, the patient was well.

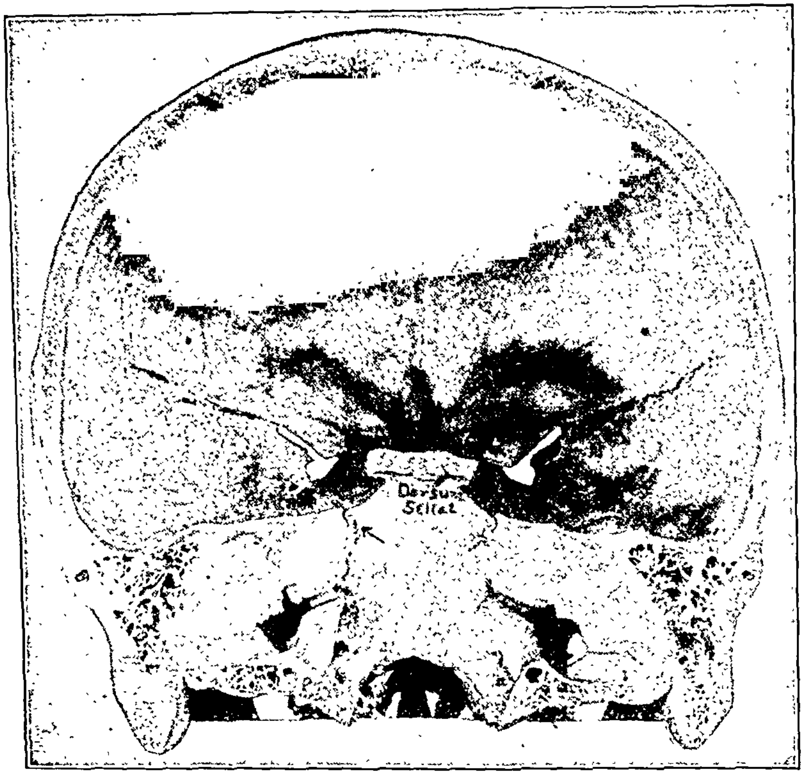

Fig. 1.—Vertical section through skull, posterior view. Arrows point to grooves at apexes of petrous portions of temporal bones, in which the sixth cranial nerves lie.

Other cases reported in eye literature are those of Terson,[3] Peyser,[4] Sauvineau,[5] Koellner,[6] Goetermann[7] and Myers.[8]

In 1908, L. Baldenweck,[9] intern on the ear service of the Lariboisiere Hospital, published a comprehensive essay on the alterations of the gasserian ganglion and paralysis of the sixth nerve in the course of inflammation of the middle ear, with case reports.

In 1910, Perkins[10] reported three cases that had been under his care for mastoiditis with paralysis of the sixth nerve, reports two cases from the practice of Dr. Alfred Wiener, and one that had been treated by Dr. S. J. Kopetsky. He covers the whole subject in an admirable way from the standpoint of the otologist, and gives a comprehensive bibliography.

Rarely paralysis of the sixth nerve is associated with external otitis. For this reason it may be of interest to report the following case:

Feb. 5, 1918, T. L., man, aged 24, came to the eye clinic at the New York Eye and Ear Infirmary complaining of double vision and turning in of the left eye of one day's duration, and pain in the left auricular region. Ten days before he had injured the canal of his left ear with a hairpin, and furunculosis of the canal had developed. The furuncles had been incised five days before. Considerable edema of the canal remained, and there was almost complete paralysis of the left external rectus without involvement of the third, fourth, fifth, seventh or eighth cranial nerves. Examination revealed no evidence of middle ear inflammation. There was, however, mild retinitis of both eyes, with recent hemorrhages and markings which indicated old hemorrhages or exudates. The Wassermann and Noguchi tests of the blood were negative, but the urinalysis showed evidence of an old gonorrheal infection of the urethra. February 9, five days after the patient began to see double, he returned to the eye clinic with orthophoria in the primary position and binocular single vision in all fields. The swelling in the external auditory canal and the pain had disappeared.

In this case it is possible, but not likely, that the sixth nerve paralysis was due to gonorrhea, or that some other constitutional condition was responsible for both the retinitis and the abducens paralysis. Even in such a case as this a transient edema, dependent on the furunculosis and involving the periosteum and fascial tissues at the apex of the petrous pyramid, may affect the sixth nerve in this position. This is the sort of case, however, to which the reflex theory of abducens paralysis best applies. This theory has been largely abandoned as unnecessary and somewhat fanciful.

The ocular paralysis is always seated in the external rectus of the side corresponding to the otitis. However, in a case reported by Rimini,[11] there were double otitis media and double external rectus paralysis. In another case, which I recently observed, there was one-sided mastoiditis with paralysis of both external rectus muscles.

C. T., girl, aged 10, Italian, was admitted to St. Mary's Free Hospital for Children, Feb. 12, 1918, with a history of purulent discharge from the left ear for four weeks, and deviation of the left eye for two weeks. The left mastoid had ruptured and pus had invaded the muscles of the neck. The day after admission, February 13, Dr. Edward D. Truesdell performed a mastoid operation. At the request of Dr. Colman W. Cutler, the consulting oculist to the hospital, I examined the patient, March 9, at which time Dr. Truesdell reported satisfactory improvement as a result of the mastoid immaculate Scott expeditions with their numerous and serious scurvy cases.

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[2] Knapp, Arnold: Arch. Ophth., **38**, 552.
[3] Terson: Ann. d'ocul., 1906, p. 503.
[4] Peyser, A.: Berl. klin. Wchnschr., 1908, No. 28.
[5] Sauvineau, C.: Ann. d'ocul., 1907, p. 321.
[6] Koellner: Deutsch. med. Wchnschr., No. 7, p. 112.
[7] Goetermann, C.: Deutsch. med. Wchnschr., No. 33, p. 552.
[8] Myers, H. L.: Am. Jour. Ophth., **33**, 127.
[9] Baldenweck, L.: Ann. d'ocul., 1908, p. 246.
[10] Perkins: Ann. Otol., 1910, **19**, 692.
[11] Rimini: Arch. internat. de laryng., **21**, 125.

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[1] Gradenigo: Tr. Cong. de Bordeaux, 1904.

The small area of contact of the abducens with the petrous bone at or near its tip is marked by a little groove, and just external to and behind the groove is a little spicule of bone; and on the border of the dorsum sellae of the sphenoid is another spicule. Between these two spicules of bone, and stretching closely over the sixth nerve, is a firm ligament, which sometimes undergoes partial or complete ossification, and to this ligament is attached the dura mater and fascial connective tissue layer, referred to above, which the abducens penetrates. Thus it will be seen that right at this point the anatomic arrangement is such that exudate or hemorrhage from an inflammatory process or from traumatism, or edema from any cause, would be likely to interfere with the function of the abducens by pressure or strangulation.

In order to understand the severe pain that occurs on the corresponding side of the head in these cases, it is important to have in mind the close proximity of the gasserian ganglion to the tip of the petrous bone. It lies in Meckel's dural cavity and rests in a depression on the anterosuperior aspect of the petrous pyramid at its tip, so that a process which would affect the sixth nerve at the tip would be likely also to affect the gasserian ganglion.

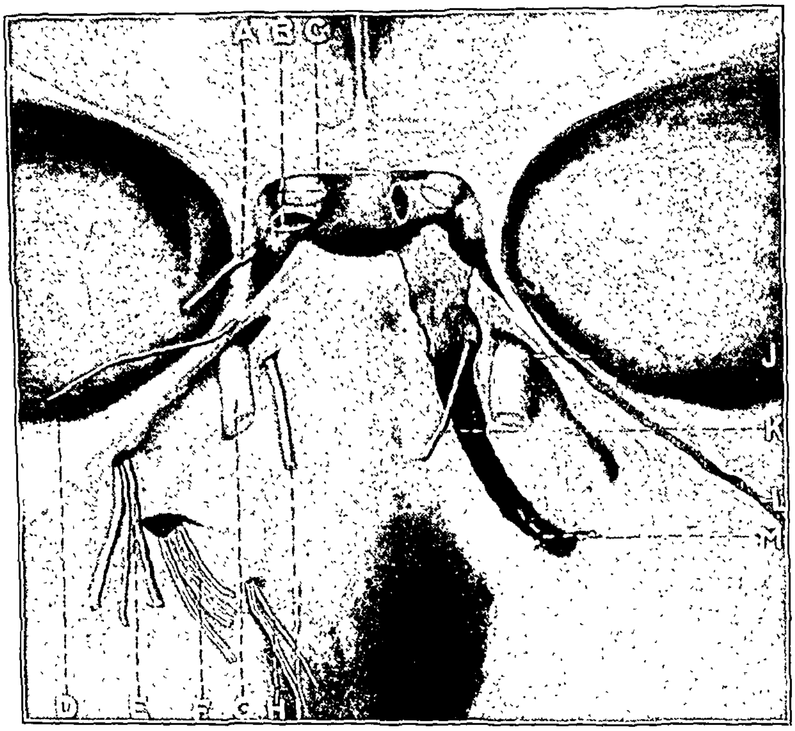

Fig. 3.—Drawing from wet specimen. The brain has been removed. On left side cranial nerves are seen entering dural openings. On right side dura has been removed to show sixth nerve entering connective tissue in posterior wall of cavernous sinus, a little below and behind apex of petrous pyramid. *A*, third nerve; *B*, carotid artery; *C*, second cranial (optic) nerve; *D*, fourth nerve; *E*, seventh and eighth nerves; *F*, ninth, tenth and eleventh nerves; *G*, fifth nerve; *H*, twelfth nerve; *I*, sixth nerve; *J*, fifth nerve entering Meckel's cavity for gasserian ganglion; *K*, sixth nerve entering connective tissue; dura has been removed; *L*, superior petrosal sinus; *M*, inferior petrosal sinus.

In ordinary otitis media it is entirely possible for the inflammatory process to extend to the apex of the petrous bone and to produce an edema or a local toxemia which will cripple the function of the sixth nerve at the vulnerable point in which we are especially interested in this study. Occasionally the petrous bone is strikingly pneumatic, and it is in such a bone that the purulent process would be most likely to invade the pyramid to the apex. Figure 2 illustrates a petrous bone of pneumatic character with a large cell directly under the groove for the lodgment of the sixth nerve, and is very convincing in this connection.

In order to reach a cell at the petrous tip there are many possible routes of invasion for infection. Perkins[15] mentions the following: (*a*) The infection may follow the sublabyrinthine route extending from the tympanum below the labyrinth and internal auditory meatus to the petrous tip. An interesting case in which the infection traveled this path is reported by Lombard.[16] Death occurred from meningitis. Necropsy revealed pus in the tip cells with very pneumatic bone. On the healthy side, the cells in the petrous tips were very large, and mercury poured into them emerged in the middle ear. (*b*) From the mastoid antrum the infection may extend through the subarcuate fossa or petromastoid canal, which passes inward beneath the superior semicircular canal, and reach a layer of cells sometimes lying above the internal auditory meatus and thus arrive at the petrous tip, (*c*) or this point may be arrived at by way of the carotid canal, access to which is obtained either by eroding the bone on the anterior tympanic wall, or through one of the caroticotympanic foramina which give passage to the carotid branches of the tympanic plexus, or (*d*) finally the infection has been found in some necropsies to be through a layer of cells extending along the eustachian tube, thus passing from the tympanum to the petrous tip.

In some cases of mastoiditis, paralysis of the external rectus of the corresponding side has been observed after the mastoid operation has been performed. In some of such cases probably the chief causative factor has been traumatism attending the operation itself, and one would expect this to take place most often in cases in which ebony hard bone has necessitated the vigorous use of the mallet. It is not difficult to see how this might disturb the tissues at the apex of the petrous pyramid in such a way as to produce hemorrhage or edema that would result in pressure paralysis of the sixth nerve at this vulnerable point.

PROGNOSIS AND TREATMENT

The paralysis may clear up in a few days, and in a few cases has disappeared almost miraculously after mastoid operation, as in Perkins' second case and in my first case. But usually it persists for weeks or months, and there is possibility of permanent impairment of the nerve.

The treatment lies in the field of the otologist, and should be left to him, for recovery from the abducens paralysis depends on his success in treating the ear condition. Although Gradenigo's syndrome may indicate a deep-seated process, this in itself does not justify mastoid operation in every case, for recovery has occurred in a number of cases without mastoid operation and even without myringotomy.

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[15] Perkins: Ann. Otol., 19, 692.

[16] Lombard: Ann. d. mal. de l'oreille, 1906, 32, 321.

ABSTRACT OF DISCUSSION

Dr. Walter H. Snyder, Toledo, Ohio: I have seen only one case of the condition described by the essayist. This was in a young woman who had had an acute otitis media, complicated by mastoiditis. She had been unconscious for about a week, or, at least, was in a deep stupor, when I first saw her. The day after her admission to the hospital she was operated on and died three days later without regaining full consciousness. The last day it was noted that she had a paralysis of the abducens on the side of the diseased mastoid. In this case the trauma of the operation did not cause the paralysis, as the tissues were very soft, no eburnation of the diseased bone had taken place, and it was easily removed with the hand curet, chiseling not being necessary. It is even possible that the operation did not go far enough, but the condition of the patient precluded any further investigation. We explored the tip especially and felt we had good drainage and that there was no necessity to enter the brain cavity, as apparently every part was draining and clean. Considering the anatomic relations, it is not surprising that this condition occurs; in fact, we would expect to find it much more common than it is, especially where the mastoid involvement has penetrated the inner table of the skull. It is, however, a comparatively rare condition. It is probable that many of the severe cases of mastoiditis exhibit this complication late in the disease, when the patient is moribund or lying with the eyes closed, hence is not noticed. The frequency with which this nerve is affected in basilar inflammations, especially in the syphilitic infections, would lead one to think that this complication would be more common in this rapidly spreading and especially destructive type of mastoid inflammation caused by *Streptococcus capsulatus,* of which the case I mention was an example.

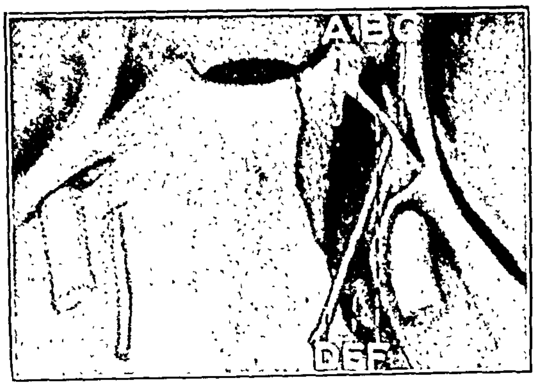

Fig. 4.—Further dissection to show sixth nerve entering cavernous sinus in relation to external wall of inferior petrosal sinus and in contact with apex of petrous pyramid. *A,* posterior clinoid process; *B,* carotid artery; *C,* apex of petrous pyramid; *D,* sixth nerve; *E,* inferior petrosal sinus; *F,* ligament.

Dr. H. H. Stark, El Paso, Texas: I recently had a similar case in a child 4 years old. The case was in the care of a general practitioner for at least three weeks after the primary attack of sore throat, which was followed in three weeks by a discharge from the right ear. In describing the case to me the physician said that it might have been scarlet fever; that he was unable to make a diagnosis. On coming to me the child had the syndrome described, pain with paralysis of the externus on the right side, the side on which the ear was involved. The ear was discharging freely, and a roentgenogram showed involvement of the cells. The temperature at the time was 102 F. The patient was placed in the hospital, and the fever subsided in two days. The discharge continued for two weeks and then stopped. No operative procedure was done. Complete recovery occurred within two weeks after the discharge had ceased. At the time the bacteriologic examination showed a streptococcus infection. I felt that the paralysis was one of toxemia, as we had had during this period of about six weeks several cases of infection of the same character, in which paralysis of the facial nerve occurred. One patient, a young man of 35, had a temporary hemiplegia lasting two weeks. I do not doubt Dr. Wheeler's deduction in these cases. I believe that they are due to a direct involvement of the sixth nerve from the misplaced cells.

Dr. John M. Wheeler, New York: If we will be on the lookout for this syndrome, we will find that this is not a rare condition. The prognosis is, on the whole, good. In some of these cases the paralysis is entirely cleared up a few days after operation; in some cases, within a few weeks or months; in some cases without operation, and in only a very few cases has the paralysis been permanent. The treatment lies entirely within the field of the ear surgeon, and the prognosis depends a great deal on his success in draining the mastoid cells.

ACQUIRED STRICTURE OF THE LOWER END OF THE URETER *

ROBERT H. HERBST, M.D.

CHICAGO

Strictures of the ureter may be due to causes that are either congenital or acquired.

Acquired strictures of the ureter may be classified into those due to (1) trauma resulting from gunshot and stab wounds, postoperative conditions, labor, and passage of calculi; (2) inflammatory strictures, the result of infection. These inflammatory strictures may be classified into, (*a*) those that are the result of direct extension from periurethral infections, (*b*) those in which the infection has either ascended along the mucosa from the bladder, or has descended from the kidney, and (*c*) those resulting from focal infections. Strictures due to tuberculosis will not be considered in this discussion.

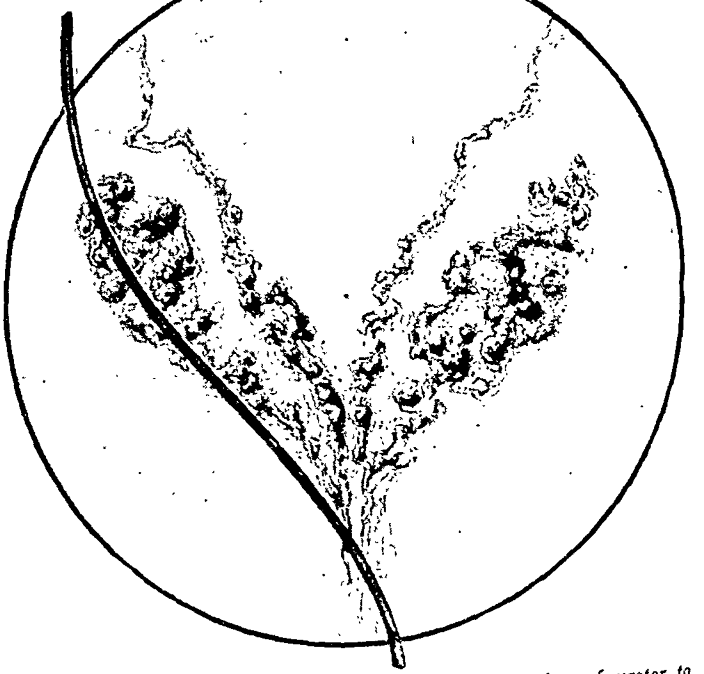

Fig. 1.—From plate made by Belfield showing relation of ureter to seminal vesicle. Vesicle filled with collargol solution. Roentgen-ray catheter in ureter.

Hunner,[1] in his excellent report of "One Hundred Cases of Ureteral Stricture," believes that focal infections play an important rôle in the etiology of ureteral strictures. He states that he is firmly convinced that "The majority of ureteral strictures, excluding those of tuberculous origin, should be classified as simple chronic strictures and that they have their origin in an infection carried to the walls of the ureter from some distant focus, such as diseased tonsils, sinuses, teeth or the gastro-intestinal tract." His cases have to do entirely with women, and I can therefore understand why he omits the infection of the seminal vesicles among these foci.

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* Read before the Section on Genito-Urinary Diseases at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

[1] Hunner, G. L.: Bull. Johns Hopkins Hosp., 1918, 29, 1.

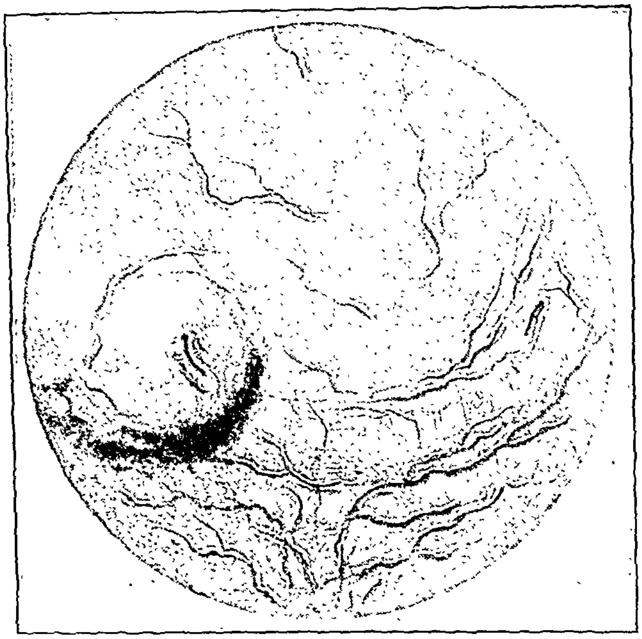

Fig. 2.—Cystoscopic view showing ureterocele of right ureter caused by stricture of lower end of ureter.

Strictures resulting from infection of the seminal vesicles, either by direct extension from these organs, or possibly by organisms of focal origin, are the type to which I shall give chief consideration.

CONGENITAL ORIGIN OF STRICTURE

In the review of some of the earlier literature on the subject of stricture of the ureter, one is struck by the frequency of congenital origin of reported cases. In Bottomley's[2] extensive review we find that most of his reports are those of children, and are unquestionably due to congenital conditions. However, it is difficult to believe that some strictures, especially those showing no symptoms until middle or later life, are of congenital origin. As quoted by Moloney,[3] "How do you explain the delay in development in symptoms until adult life of obstruction of the ureter, when the cause is evidently congenital?" Barringer[4] in 1913, reporting a case of unilateral kidney calculus complicated by ureterocele of the opposite side, stated: "A ureterocele is a dilatation of the intravesicle portion of the ureter. This dilatation is dependent on a narrowing or stricture of the ureteral opening. It is probable that this strictured condition is always congenital, notwithstanding that such a condition has been attributed to the passage of calculi or blood clots through a ureter." Notwithstanding these earlier opinions of congenital origin of these strictures, one finds a gradual tendency toward the belief in the acquired origin of many of them found in middle and later life. Walther[5] believes that stricture of the ureter is not as rare as we have been led to believe, and states that it should be remembered that this condition may be a possible cause for some of the intractable cases of renal infection failing to respond to the usual treatment.

INFECTING ORGANISMS AS A FACTOR IN STRICTURE

The principal organisms that play the rôle of the exciting etiologic factors in the primary inflammatory stage of stricture of the lower end of the ureter are the colon bacillus, the pus coccus and the gonococcus. In the past it has been commonly believed that the gonococcus played a very small rôle in the production of strictures in this region, owing to the infrequency of infection of the bladder mucosa by this organism. However, I am satisfied that the gonococcus is responsible for no small number of strictures that occur in this location in the male, and that the preexisting infection of the ureteral wall occurs by direct extension from its closely approximated neighbor, the seminal vesicle. I shall later give briefly the history of a case which illustrates this point.

In the literature there are reported numerous cases of strictures of an inflammatory nature spreading to the ureter from adjacent organs. In 1902, Morgan[6] reported a case in which, after numerous operations on the urinary tract, he found the cause of the trouble to be due to an obstruction of the lower end of the ureter, caused by the binding of the ureter to the seminal vesicle, the result of an inflammatory process which had long existed in the vesicle. Belfield,[7] in a discussion on the subject of pus-tubes in the male, stated "The intimate relation between the juxtavesical ureter and the seminal duct seems, therefore, responsible for considerable kidney and ureter disease hitherto unexplored."

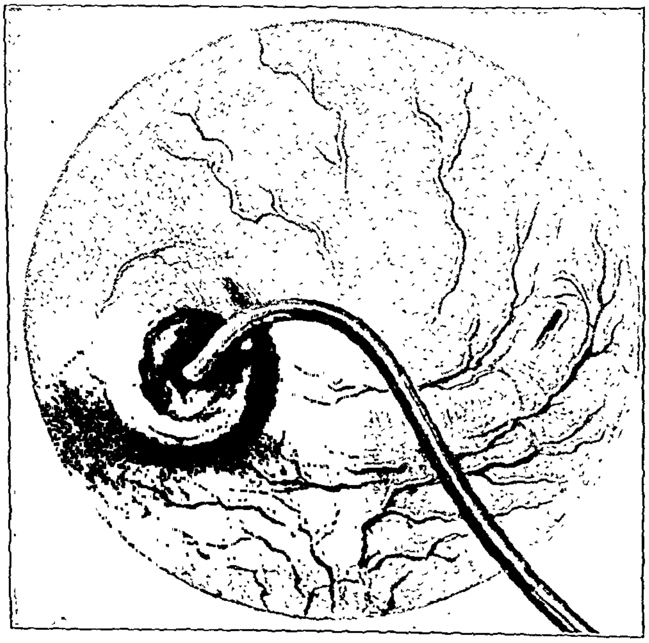

Fig. 3.—Indentation of ureterocele made by attempt to enter strictured extremity of ureter.

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[2] Bottomley: Ann. Surg., 1910, 52, 997.
[3] Moloney: Surg., Gynec. and Obst., 1917, 24, 111.
[4] Barringer, B. S.: Interstate Med. Jour., 1913, 20, 343.
[5] Walther: New Orleans Med. and Surg. Jour., 1916, 69, 115.
[6] Morgan: Ann. of Surg., 1902, p. 528.
[7] Belfield, W. T.: Tr. Am. Urol. Assn., 1909, 3, 13.

McNeill[8] reported two cases of inflammatory strictures of the right ureter due to a pelvic abscess following ureterotomy of the left ureter. Frank,[9] in discussing the causes of ureteral obstruction, gave as a cause an extension of inflammation from infection of the uterus and its appendages. Again, we are all familiar with the condition found in the bladder, known as edema bullosum, commonly due to the gluing of a pus-tube to the bladder wall. If the above conditions are possible, it seems more than likely that an infection going on in the seminal vesicles may spread to the wall of the ureter.

The *pathogenesis of these strictures* is quite similar to that of strictures of the urethra. Let us here briefly consider the course of development of a stricture in the urethra.

First, we find the infecting organism (usually the gonococcus) destroying areas of the superficial mucosa, or what I choose to call the rubber coat of the urethra. The destruction of this mucosa is followed by infiltration of urine with its chlorid constituents. It is the chlorids which have largely to do with connective tissue proliferation and subsequent contraction of the involved area. In the development of strictures in the lower end of the ureter, we find an analogous condition, but reversed in its course. The infection spreads from the vesicle through the outer coats of the ureter, finally involving the lining mucosa with subsequent infiltration and connective tissue proliferation. For this reason some of the strictures become very dense, hard and fibrous, and take on the form of the well known impassible stricture of the urethra. The two cases reported are of this type.

REPORT OF CASES

Case 1.—M. F., aged 30, gave a history of gonorrhea contracted in 1910. The urethra discharged profusely for a number of months, during which time he developed an infection of his right epididymis, for which both the right epididymis and the testicle were removed. The urethral discharge, accompanied by a severe perineal pain, continued intermittently for five years, and in 1913 an "osteopathic surgeon" made a perineal incision of some kind which left the patient with a fistula opening into the bulbous urethra.

He was admitted to my clinic in August, 1915, and, on examination, the perineal fistula mentioned in the foregoing was found, also both seminal vesicles were greatly enlarged and hard. He complained of pubic pain, and for this reason a cystoscopic examination was made which revealed a normal bladder and both ureters perfectly patent. At this time I made a perineal section and closed the opening in the urethra. He was given massage and instillations, with a hope of clearing up the vesiculitis, but after a few weeks he failed to return for treatment. Two years later, in December, 1917, he returned to the clinic, still complaining of his old condition, also of severe pain in the lower right abdomen which radiated upward toward the region of the right kidney. His vesicles were found to be in about the same condition as when he left, for the relief of which I performed a bilateral vesiculotomy. At this time a cystoscopic examination was again made, and, to my surprise, I found a well marked ureterocele on the right side of the bladder, with the orifice of the right ureter located at its summit. Numerous attempts to enter this orifice with small ureteral catheters and bougies were not successful. The roentgenogram of the entire urinary tract was negative. From these findings, the diagnosis of acquired stricture and ureterocele of the right ureter was made. After several attempts, I succeeded in cutting the strictured orifice with a hook-shaped knife used through a Senn operating cystoscope. The small opening was further enlarged with scissors used through a Buerger operating cystoscope. The proximal end of the stricture has not been cut, but I am able to enter this with a small bougie, and expect to succeed in dilating this part of the stricture. I report this case because it illustrates that this stricture evidently developed between the two cystoscopic examinations, between which a period of two years elapsed, also that the stricture had its origin in the violent and persistent infection of the seminal vesicles.

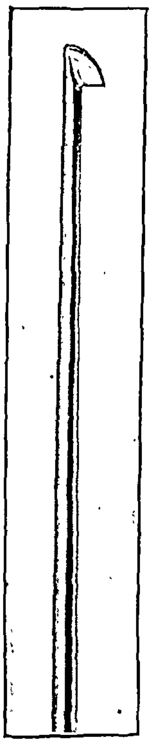

Fig. 4.—Hook-shaped knife used in cutting stricture.

The most common and pronounced symptom is pain, which very frequently is that of a typical renal colic, as illustrated by the following case:

Case 2.—W. G., aged 55, single, stated that some years before he had developed a gonococcus infection which persisted for more than a year and which was accompanied by bladder symptoms, that is, frequent and imperative urination. He consulted me in September, 1913, complaining of a periodic colic-like pain in the back, which was referred to the region of the right kidney. These attacks of pain had come on about every week or two during the previous six months. They were very severe in character, requiring morphin to relieve them. I had the opportunity of seeing him in two of these attacks, and can state that they were typical of renal colic. Examination showed the prostate and seminal vesicles enlarged, the expressed specimen from which contained many pus cells. Cystoscopic examination revealed a normal bladder mucosa. In attempting to catheterize the ureters, I found a complete obstruction of the left ureter, just within the orifice. The right side was found perfectly patent. A roentgenogram of the entire urinary tract showed a small shadow which might be located near the lower end of the left ureter. After numerous unsuccessful attempts to enter the left ureter with very small ureteral bougies, a diagnosis was made of stricture of the lower end of the left ureter. Several attempts to cut the strictrue through an operating cystoscope failed. A suprapubic cystotomy was then made and a small, hook-shaped ureteral knife was forced through the stricture and, by its withdrawal, the entire narrowed portion of the ureter was cut through. A small ureteral curet brought out some fine pieces of gravel which had collected at the proximal end of the stricture, and which had probably been responsible for the shadow seen in the roentgenogram. A No. 8 ureteral catheter was now readily admitted. This patient has been seen and cystoscoped a number of times during the last four years, and the stricture does not show any tendency to recur, nor has he been troubled again by the attacks of colic-like pain.

ETIOLOGY AND TREATMENT

The spasmodic character of these attacks is likely due to complete obstruction of an already very narrow outlet of the ureter. This obstruction may be due to the admission of a pus plug, or a small piece of gravel, into the stricture area, or may be due to the same cause as is found in acute retention of the urine caused by stricture of the urethra. Under these circumstances, the pressure of the urine from behind produces an edema of a canal, already very much narrowed with resulting temporary complete obstruction. The attack promptly subsides on the passage of the obstructing foreign body, or the disappearance of the edema. The pain may be of a constant, dully aching character, referred to either side of the suprapubic region, or not infrequently radiating along the course of the ureter toward the kidney. I have seen

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8. McNeill: New York Med. Jour., 1917, **106**, 786.
9. Frank: Interstate Med. Jour., 1914, **21**, 1209.

cases of seminal vesiculitis in which the most prominent symptom was this radiating pain along the ureter, and, on catheterizing the ureter, have found what I thought at the time to be a small meatus. However, the pain disappeared after a number of dilatations of the orifice of the ureter. I think it is possible that these were cases in which there was an incipient stricture of the lower end of the ureter. I am also of the belief that in some of my cases of pyelitis which I thought I cured by pelvic lavage, the patient derived more benefit from the passage of the ureteral catheter and the dilatation of a stricture of large caliber, than from the lavage. In such cases, the urine may be perfectly negative during the attack of colic, and may show pus after its subsidence, the pus coming from the infected kidney pelvis after the stricture allows passage of urine from the affected side.

The patients may also have chills, fever, and gastro-intestinal symptoms, as one observes in an acute obstruction of the ureter from other causes.

The differential diagnosis of these strictures from the symptoms is necessarily difficult. However, the cystoscope, the ureteral catheter, the olive-tipped bougie, and the roentgen ray with pyelography are absolutely essential, and will usually help one in clearing up these cases. The olive-tipped bougie is extremely valuable in the diagnosis of stricture of large caliber. When the stricture is very small, or even impassible, the ordinary ureteral catheter will clearly define the condition. In the latter type, we frequently find a decided bulging of the end of the ureter into the bladder—the condition known as ureterocele.

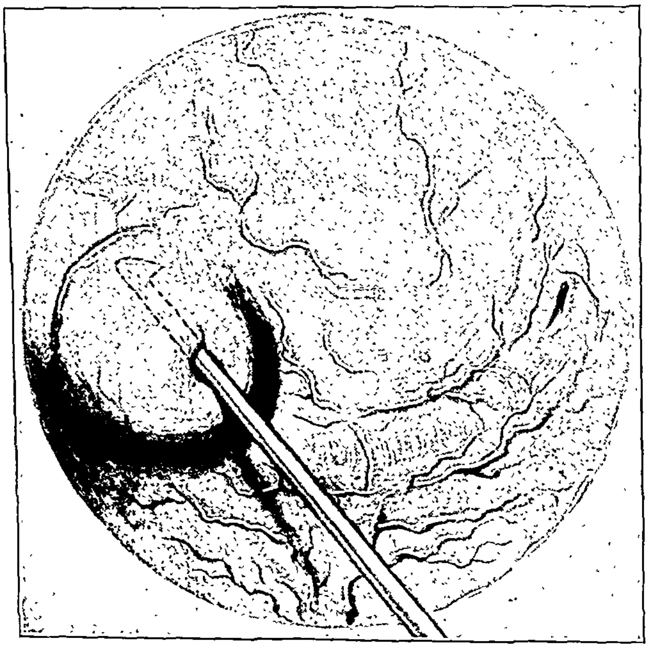

Fig. 5.—Introduction of hook-shaped knife into the strictured area.

IMPORTANCE OF EARLY DIAGNOSIS

Too much importance cannot be placed on the early diagnosis of this condition, since we know that as the stricture becomes more organized, and contracts, the changes in the kidney become more serious.

Strictures of large caliber can usually be readily dilated by means of catheters, bougies and ureteral dilators. In those cases in which, on repeated attempts, we are not able to enter the strictured area, a cutting operation, either through an operating cystoscope or through a suprapubic opening, is indicated. Where this is impossible reimplantation of the ureter, or even nephrectomy, may be necessary. A hook-shaped knife, used in the two cases reported in this paper, has proved very useful in the treatment of those cases requiring a cutting operation, either through the cystoscope or through the opened bladder. To prevent subsequent contraction and recurrence, it is well to practice dilatation for some time following the cutting operation, as is commonly done in operations on the urethra. In cases in which the seminal vesicles are still the seat of infection, treatment must also be directed to these organs, either by stripping, or by one of the operative measures, such as vasotomy or vesiculotomy.

The prognosis necessarily depends on the amount of destruction produced in the kidney. In the cases in which serious changes have occurred in this organ, especially those of long standing, little benefit may be expected from either dilatation or cutting of the strictured area. Therefore, I again call attention to the importance of an early diagnosis.

SUMMARY

1. Strictures of the lower end of the ureter occur more frequently than is commonly believed, and not a few of them are of the inflammatory acquired type.

2. Strictures of this part of the ureter may result from infection spreading from an adjacent seminal vesicle.

3. Strictures in this locality play an important rôle as the etiologic factor in some of the obscure infections of the kidney.

4. The importance of early diagnosis and treatment, before serious changes occur in the kidney, cannot be too strongly emphasized.

ABSTRACT OF DISCUSSION

Dr. V. D. Lespinasse, Chicago: This paper brings up the question of stricture of the ureter. There is no question that slight disturbances of the ureteral lumen will produce marked symptoms and marked trouble. My observation is that there is a tendency to diagnose stricture of the ureter when there is no stricture there. If the catheter goes in a centimeter or two and cannot go any farther, the inference drawn by many is that a stricture is present. This is not so. When the catheter does not go clear to the kidney the diagnosis of ureteral stricture from this fact is not permissible. The diagnosis of stricture from the use of the catheter is quite difficult. According to Hunter's teachings, stricture of the ureter is an extremely common condition. Strictures of the ureter, particularly in the lower end of the ureter, are, at least in many cases, due to infections of the vesicles. The perivesiculitis causes a periureteritis with infiltration and loss of elasticity in the ureteral walls. Whether such a lesion should be called a stricture is doubtful, although it really is a stricture in the strict anatomic sense; but it may be simply an infiltration of the wall of the ureter, the elasticity of which is interfered with, with no real narrowing, except that in the strict sense of the term it has lost its elasticity. Of course, the treatment there is to remove the infection from the vesicle, if possible, and dilate the ureter by the use of a sound or bougie.

Dr. William F. Braasch, Rochester, Minn.: I question very much the possibility of making a diagnosis of stricture of the ureter by means of the ureteral catheter alone. Physiologic and anatomic changes in the ureter may give a sense of obstruction to a catheter which may lead us to believe we are dealing with a stricture. I have frequently met with such obstruction where no dilatation of the ureter above the apparent obstruction could be demonstrated in the ureterogram. We also must recognize the fact that some ureters are of much larger caliber than others. I have frequently observed definite ureteral obstruction in normal individuals who had no abdominal pain nor any other evidence of ureteral involvement where it was impossible to introduce a No. 6 catheter up to the renal pelvis. There are so many other causes for obstruction to the ureteral catheter that it is quite impossible to make a diagnosis of stricture of the ureter because of such obstruction alone.

Although strictures of the ureter unquestionably do exist, I am certain that they do not occur as frequently as some observers would lead us to believe. I am under the impression that postmortem pathology does not bear out the assumption of the frequency of the stricture of the ureter. When found in conjunction with renal infection, it is consequent to such infection and not an etiologic factor. Actual stricture of the ureter cannot be cured by simply passing a catheter or by a single dilatation. On the contrary, it usually requires repeated dilatation at regular intervals as long as the patient lives.

Dr. John R. Caulk, St. Louis: There are two types of ureteral stricture, one in which there is a stricture and the other in which there is not, the latter group predominating. I am in hearty accord with what Dr. Braasch said. I have been impressed with the infrequency of true strictures of the ureter from intra-ureteral causes aside from tuberculosis and an occasional stone impaction. Strictures are not infrequently due to implications in a neighboring inflammation, such as seminal vesicle and pelvic inflammatory diseases. It has been my experience that the most important type of stricture of the ureter and the one which has caused so much confusion and, I believe, false reports, is the spasmodic stricture, or rather the spasmodic contraction of the ureter in the vicinity of an outside inflammation, particularly the seminal vesicles, and it is this condition that I wish to bring to your attention as being responsible for many of the so-called strictures. With the ureter catheter or with bougies it is impossible for any one to differentiate between them in all cases. I want to impress on you the value of large doses of atropin as a means of diagnosis between stricture and spasmodic stricture. Atropin will help the patient out of trouble very often. More attention must be paid to the tissues around the ureter and to ureteral spasm.

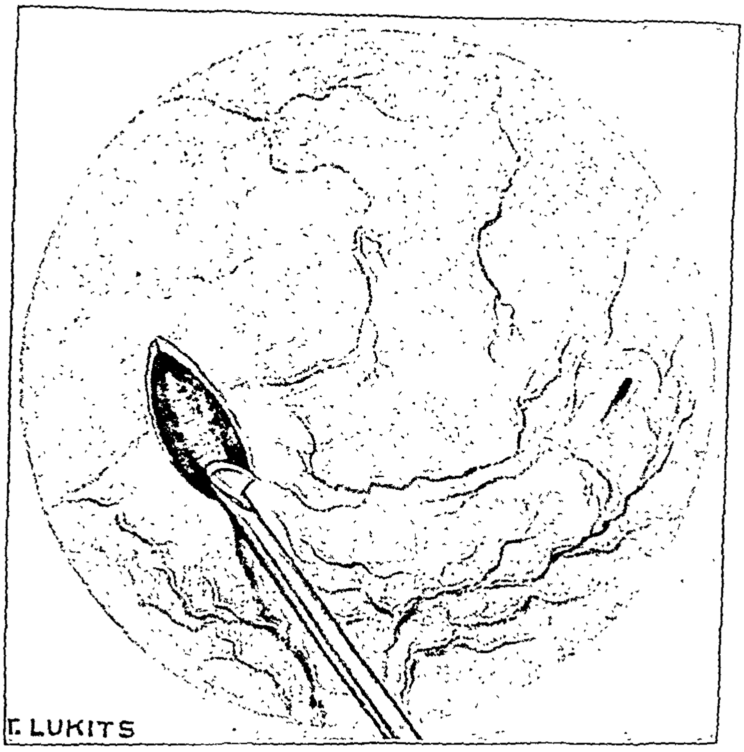

Fig. 6.—Incision of strictured area produced by withdrawal of hook-shaped knife.

Dr. Granville MacGowan, Los Angeles: Strictures occur in the ureter just as in any other tube lined with a mucous membrane, arising from influences internal or external to the ureter itself, and some are prenatal. In my experience, strictures of the ureter are usually due to pelvic troubles that produce adhesions followed by contractions in the ureter itself. Acute appendicitis sometimes produces obstructions of the ureter and causes renal colic, but that passes away along with the removal of the appendix or the subsidence of the attack. Chronic appendicitis, in which the appendix becomes bound down in the pelvis in a matted mass of inflammatory tissue, involving the ureter, sometimes will obstruct the ureter, causing Dietl's crises. I have seen two cases of this kind. There is no valid reason why stricture of the ureter should not follow the passage of a stone, although we know it does not do so usually, yet occasionally the injury must be sufficient to cause contracture especially in persons who have the tendency to keloidal degeneration.

Atropin had been used to relax these attacks. Spinal anesthesia alone will relax a patient and allow the differential diagnosis between stricture of the ureter and muscular spasm of its walls. I have three specimens of ureters which show very distinctly strictures within the bladder wall. In one of them, during life, I could pass a catheter very readily; another I never did get a catheter through. The third is merely a postmortem specimen. There can be no just contention that this disease does not exist, but it is not nearly as frequent an occurrence as urologists think it is.

Dr. William M. Spitzer, Denver: I do not know whether these strictures are true strictures or not. I have met them very frequently in cases of seminal vesiculitis. I know that I cannot pass a catheter more than 1½ c.c. That may be due to outside pressure, or it may be due to stricture, but it is very common, indeed.

Dr. Gustav Kolischer, Chicago: Stricture is caused by the narrowing of the ureteral lumen, due to permanent pathologic changes in its walls. Compression is a temporary condition, due to extraneous causes. There is no doubt that such a condition will form an obstruction to the catheter. You will very rarely find true stricture of the ureter unless after infection. A simple obstruction to passing the catheter does not prove the presence of a true stricture. It very often happens after a gynecologic operation that either on one side or the other you cannot pass a catheter, but that may be due to distortion of the ureter and not to stricture. There is only one way of proving that a stricture exists, and that is by passing an olive-tipped bougie or raying with a contrast fluid. If repeated examinations show the same result, then we have to deal with a permanent condition and can make a diagnosis of stricture.

I have always been very doubtful, just as Dr. Braasch is, as to whether it is possible to cure a ureteral stricture by inserting bougies. I cannot imagine any circumstances in which a ureteral bougie could overcome the resistance of a real ureteral stricture. If this bougie was sufficiently hard and resistant to stretch the cicatricial wall I would be afraid to use it, because I would be afraid of perforating the wall. I believe, however, that it is possible occasionally to clear up pyelitis by regular catheterization. I agree with Dr. Braasch that we find a number of normal individuals in whom you are hardly able to enter the ureteral mouth at all, but that is not due to stricture, but to a congenital narrowing of the opening.

The rather energetic treatment recommended by Dr. Herbst in some of his cases, that is, an incision high up into the vesical wall, is rather risky. Real strictures of the ureter may occur after extensive gynecologic operations leading to extensive denudation of the ureter and followed by ureteritis, as proved by postmortems when those patients died from subsequent pyonephrosis.

Dr. J. L. Boogher, St. Louis: I believe that these strictures indicate a pathologic change in the structure. That can take place from mere pressure; there must be a formation of fibrous tissue in the structures which is brought about by the production of cells in the tissues which cause the lessening of the blood pressure from the normal mucous membrane. The necessity on the part of nature for the production of this tissue is either because of infections or from the pressure of the mucous membranes. Without the development of the spindle-shaped cell or cells of lessened blood requirements strictures cannot form. Spasmodic strictures may occur, but they cannot be called strictures; they are simply an element which produces a temporary tightening of the lumen of the vesicle; but when we have the pressure of foreign tissue brought into any sort of a channel, I do not see how the passage of any sound can change the character of that tissue. The cause of the production of the peculiar tissue which is there must be discovered and removed. I do not see why a catheter would not cause some irritation and add to the stricture more than it would detract from it.

Dr. Bernard Erdman, Indianapolis: With reference to Dr. Braasch's remark about the normal narrowing of the ureter, it seems to me that the meatus of the ureter bears the same relation to the ureter that the meatus of the urethra does to the urethra. It is probably the narrowest portion of the entire canal. Another point that ought to be brought out is this: All ureters do not enter the bladder in the same manner. It is sometimes a very difficult problem to pass a ureter catheter in an individual in whom I absolutely suspect no stricture at all. I would like to take issue with Dr. Boogher about the spindle cells, and I think we have a good deal of trouble with round-cell infiltration, too.

Dr. J. Dellinger Barney, Boston: I would like to get an expression of opinion as to the use of papaverin, mentioned by Dr. MacGowan and others. I have tried it in several cases, and have had about as good results by simply attempting to pass a catheter.

Dr. William F. Braasch, Rochester, Minn.: We have used papaverin in the endeavor to remove stone from the ureter in twenty-five or thirty patients. I am under the impression that papaverin was not the greatest factor in the majority of instances in which we were successful. When a stone can be removed by cystoscopic methods, manipulation by the ureteral catheter so as to shift the stone's position is probably the most important factor. Since this is usually done when introducing papaverin, the latter has been given greater credit than it deserves.

Dr. Robert H. Herbst, Chicago: I agree with the statement made by Dr. Braasch and Dr. Caulk, that the ureteral catheter is of very little value in the diagnosis of stricture of the ureter. There are many conditions which may cause the interruption of the catheter, both into and along the ureter, and one must be very cautious in making the diagnosis in this way without other findings. This is also true of the olive-tip bougie. When one is able to enter the narrowed portion with a catheter, the injection of a contrast fluid and the roentgen ray are of great value in making the diagnosis. However, this is not possible when the obstruction will not admit even the smallest size catheter. The two cases reported were both of the impassable type.

The cases of strictures reported in this paper were of the type which are found at the extreme lower end of the ureter and which have been preceded by severe inflammatory changes in the seminal vesicles. I believe that these obstructions are due to inflammatory changes in the wall of the ureter and not adhesions binding the ureter to the seminal vesicles. The wall of the ureter is too rigid to be compressed in this way. In opening the lower end of the ureter we must keep in mind the danger of making the incision too long. The ureter is inserted into the wall of the bladder for a distance of 2.5 c.c., and the incision must be kept within this limit.

The Microscope.—The first compound microscope was probably invented by the Middleburg lens grinders, Johann and Zacharias Jansen, about 1590.

THE RATIONAL ETIOLOGY AND SATISFACTORY TREATMENT OF DACRYOCYSTITIS *

W. R. THOMPSON, M.D.
FORT WORTH, TEXAS

The man who first suggested a lacrimal probe was thinking along scientific lines. By its use he hoped to remove the obstruction from the nasal duct, and restore its normal function. His disappointment came, however, when he learned, from repeated efforts on patients in whom the probe could be passed through the duct into the nose, that in most instances the tendency to an immediate closure was so great that the hope of draining the sac of its infectious contents had to be abandoned. The failure of the probe to give relief by drainage suggested the use of the style, which proved to be unscientific in principle and unsatisfactory in results.

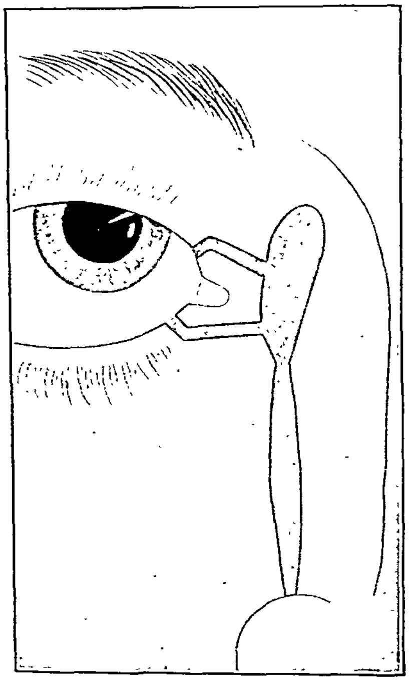

Fig. 1.—Normal sac and nasal duct.

For several years all contributors to this subject seem to have given up the idea of drainage or the restoration of the normal function of the lacrimal sac and nasal duct, and instead have directed their energies to sac destruction or removal, or direct drainage into the nose.

It is not my purpose to criticize the different methods of treatment. In my opinion, however, all methods depending for their success on the complete destruction of the function of the sac and duct are more or less faulty.

In the absence of adequate postmortem information, it is impossible to determine the exact cause of nontraumatic stricture of the nasal duct. Our textbooks say that inflammation of the nasal mucous membrane and obstructions resulting from the enlargement of the inferior turbinates, nasal polypi, etc., are among the most common causes. There appear to be some very good anatomic reasons for the belief that other and possibly more rational causes exist.

The nasal end of the nasal duct is by far the best protected of all openings entering the nasal cavity. Nature evidently realized the importance of having this duct perform its function properly at all times; to that end she displayed great wisdom in the construction and location of the inferior turbinates. The duct, as all know, enters the nasal cavity with rather an expanded orifice, immediately beneath the anterior end of the inferior turbinate. The upper border of this bone is thin and is connected to various bones along the outer wall of the nose; the lower border is free, thick, and cellular in structure. The outer surface, looking toward the opening of the duct, is concave and assists in the formation of a large and well ventilated cavity — the inferior meatus, into which the duct opens. When this bone becomes hypertrophied, the enlargement takes place on the inner or

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* Read before the Section on Ophthalmology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

can be employed and in a very large percentage of cases the trouble relieved in a few days.

My experience with this method extends over a period of two and one-half years, during which time cases of epiphora, mucocele and purulent dacryocystitis have been cured and the function of the sac and duct restored. Since most of these patients get well with one operation and no after-treatment, it is very difficult to get accurate statistics, as they all return home immediately, and some of them live in remote localities. Fortunately I have been able to follow a variety of cases, which prove beyond question the value of the method. The following cases are given as illustration:

REPORT OF CASES

Case 1.—The first person to be operated on by this method was a man, aged 65. He gave a history of having had a purulent discharge from the sac for twenty years. I had treated him with probes sixteen years before, with no success. The sac was considerably dilated, as indicated by a decided depression after he expelled the pus, which he did several times daily. He was well in ten days, kept under observation for two years, and has had no further sac infection, overflow of tears, or lacrimal conjunctivitis.

Case 2.—A woman had purulent dacryocystitis of long standing, and gave a history of two lacrimal abscesses. A fistulous opening into the sac existed at the time of operation. When seen, five weeks later, she said that she was well a week after the operation. Cocain passed readily into the nose and mouth from the conjunctival sac.

Case 3.—A man had mucocele of long standing, with severe lacrimal conjunctivitis. He was well in a week after operation. He has been seen monthly for six months, and has no evidence of his old trouble. Cocain passes through the nasal duct into the nose and mouth.

Case 4.—A woman with epiphora was not benefited by three months of ordinary treatment. She was relieved at once by operation, and has been under observation for seven months without recurrence.

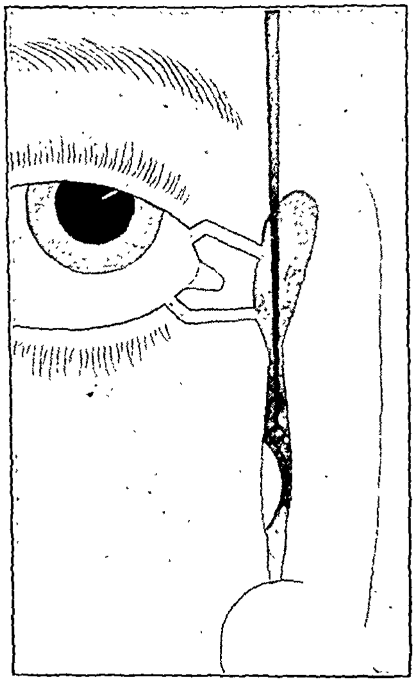

Fig. 3.—Curet in position for augur-like motion.

CONCLUSIONS

1. The simplicity of the method makes it attractive.
2. It requires but little skill to perform a good operation.
3. The sac and duct should never be irrigated after operation.
4. No loss of time or hospital expense is incurred.
5. No great outlay is required for instruments.
6. Every type of dacryocystitis can be cured, and function of the duct restored.
7. The danger of fracturing the bone, or making a false passage or producing hemorrhage with the probe, is avoided.
8. Thoroughness is absolutely essential to success.

ABSTRACT OF DISCUSSION

Dr. Harry W. Woodruff, Joliet, Ill.: With reference to the etiology of dacryocystitis, as advanced by Dr. Thompson, I believe that he has given us a probable cause for these conditions, the presence of foreign bodies in the nasal duct. We ave had no more satisfactory explanation of the etiology of ronic dacryocystitis with stricture. Perhaps many of you have had the experience of seeing foreign bodies actually lodge in the puncta. Small ones go through easily and may lodge on the mucous surface of the nasal duct. I have a few times removed cilia that had passed into the canaliculus and were too long to make the turn and go down into the sac.

I operated on seven patients by this method. Two of these were cured; at least they have not returned, and they usually return if they are not cured. The remainder were not cured. Dr. Thompson suggested to repeat the operation. I did so on some of them, and I got no results. Dr. Thompson thinks that the cause of failure is lack of thoroughness, but in doing this secondary operation I discovered that I had done the first operation so thoroughly that a great deal of cicatricial tissue had formed. Perhaps my thoroughness, however, was applied in the wrong situation; that is, there had been too much curettement of the sac and not enough of the stricture. One class of cases in which this operation is not indicated is dacryocystitis in infants, congenital dacryocystitis. These cases are all curable by probe and washing when taken very early, and they are curable in one or at most two treatments. In these cases there may be present a membrane about the nasal opening of the duct; as soon as it is broken down an immediate cure follows.

In passing the probe in these young infants, only a few weeks old, it often happens that the membrane is not broken down but is pushed ahead of the probe. You have no means of knowing this, except that when you use the syringe the fluid does not come through into the nose. This is my theory. I have had two cases of that kind in the same family and obtained an absolute cure in each case.

I am not satisfied that Dr. Thompson's method is an absolute cure; neither am I satisfied that it is a failure. I believe that it is a better method than those methods which attempt to make an opening through from the lacrimal sac into the region higher up. In many of these cases we will be compelled to resort to the radical procedure of extirpation of the sac.

Dr. John Green, Jr., St. Louis: Dr. Thompson's statement that the style is "unscientific in principle and unsatisfactory in results" is, in my opinion, rather too sweeping. Given, a narrowing of the bony duct, with simple epiphora, in which the passage of probes of moderate size is possible without the use of force, the wearing of a style not rarely results in a permanent reestablishment of satisfactory drainage. I have operated in six cases of chronic dacryocystitis in the following manner: After cocainizing the sac with 5 per cent. epinephrin cocain solution, the canaliculus is slit freely, and a small probe, say a Bowman 4, is passed to the nostril; a few drops of 10 per cent. cocain with epinephrin is injected into the bony duct. This is repeated twice at intervals of three minutes. During each injection the head is held forward so that any of the solution that reaches the nasal end of the duct will flow out of the nostril. The duct is then dilated rapidly up to 8 or 10 Theobald. The sac and duct are then curetted according to the method described by Dr. Thompson. None of these patients have complained of pain, which I attribute to the free use of 10 per cent. cocain prior to the introduction of the larger probes and curet. Too short an interval has elapsed to speak of ultimate results, but the immediate improvement was very striking, the reestablishment of free drainage and the cessation of pus formation in the sac. I was very glad to hear Dr. Woodruff speak of the use of probes in the dacryocystitis of infants. It is my impression that man of us still reso [illegible] zing methods, allowing these c dren to go mor [illegible], when one or two probings effect a perman

Dr. Arthur E. Prince, Springfield, Ill.: Dr. Woodruff's method of treating infantile dacryocystitis is endorsed. In my experience two probings have been sufficient to cure every case that I have seen, and it would be very unwise, almost criminal, to lacerate the mucous membrane of the canal in a case of that kind. I take exception to Dr. Woodruff's statement questioning the wisdom of opening the sac directly into the nose, and thus obtaining permanent drainage. Three years ago I published a preliminary report in the *Ophthalmic Record* of an operation for draining the sac directly into the middle meatus of the nose. Since that date I have never had occasion to remove a single lacrimal sac, neither have I had recourse to the excellent method of Dr. Gifford for destroying the lacrimal sac with trichloracetic acid. I take exception to the treatment by curetting the nasal duct on the ground that the curettement would probably cause an additional stricture and would be contraindicated in cases of congenital epiphora, as has been pointed out by Dr. Woodruff.

Dr. Harold Gifford, Omaha: I want to compliment Dr. Thompson on his theory and on his practice, if it is as successful as he says it is; and the proof of the pudding is the eating. So far as I know, this method is original with Dr. Thompson. The idea that strictures are commonly due to the accumulation of small foreign bodies at the narrowest portion of the sac or duct is well worth consideration. To account for this we really ought to find that in these people who have these strictures, the lacrimal puncta must be unusually large to allow these foreign bodies to enter. It certainly is rather rare to find any foreign bodies in the sac, but then, as Dr. Woodruff says, the fact that we have all seen a cilium part way through the punctum, shows that a foreign body of appreciable size certainly can make the passage. When I first heard of the method of Dr. Thompson I felt that it was a good way of destroying this duct and of getting a permanent closure, but Dr. Thompson's results indicate that I was wrong. I can easily see how, if his idea is correct, if granulation tissue forms in that neighborhood, the removal of it with a smooth curet might be of very permanent value.

Dr. Melville Black, Denver: I was very much interested in Dr. Thompson's theory of causation. It is not borne out by the fact that most cases of dacryocystitis are double. If this condition of affairs was almost invariably single, the hypothesis of foreign body causation would be much more tenable. But there is some inherent underlying cause. Otherwise, these cases would not almost always be double. In his drawing Dr. Thompson gives the formation and position of the seeming deposits of lime salts, or whatever it is, in the most bulging portion of the lacrimal canal, the portion in which you would not naturally expect the formation of a lime salt deposit. If there was a foreign body in the canal it presumably would not lodge in the largest portion, but in the most closed and dependent portion, and then we would have formed around the foreign body a lime salt deposit.

I take it that his presumption that we have this sort of a formation is purely theoretical. He has not said, in his paper at least, that he has made any dissection of the canal, nor demonstrated the actual presence of a foreign body. Furthermore, as Dr. Green has remarked, it would be well to determine by microscopic analysis of these curettements whether or not anything came from the canal. Everything that we have done, up to the present time, in our endeavor to reestablish the patency of this canal, has been a failure, and if this thing will do it, I want to give it a trial.

Dr. G. Henry Mundt, Chicago: I am rather surprised that some reference has not been made to the inadvisability of splitting the punctum. I have for a number of years watched the splitting up of the canaliculus, and various and sundry other procedures. It is my observation that any procedure on the lacrimal drainage apparatus, of which the splitting up of the canaliculus is part, is unsatisfactory. Dr. Thompson speaks about the importance of epiphora as preceding dacryocystitis. It may be so. I do not know. I never have followed that carefully. But I have done this in all patients who have epiphora: I make pressure over the lacrimal sac, and if there is no secretion in the sac I forget the lacrimal drainage apparatus. I believe that is the best thing to do. Unfortunately, I have not tried this procedure, but the probability of my trying it is precluded by the necessity of splitting up the canaliculus. I think that I shall continue to do Dr. Gifford's procedure.

Dr. W. R. Thompson, Fort Worth, Texas: I am enthusiastic over this method. I believe there is a good deal more to it than the majority are inclined to believe. I do not consider the splitting of the canaliculus a very serious matter. If that is the only pathologic condition remaining after the cure of a case of dacryocystitis, the patient will never complain. One patient on whom I operated a year and a half ago had a mucocele. There was no great amount of pus, but there was a decided mucus deposit in the sac which could be pressed out. I operated after this method, removing the constriction in the duct completely. I want to emphasize that that is the main part of the operation. In this case I did very little to the sac, almost nothing, but I did restore the bony canal to its normal size. That man had never been operated on before. That was the end of the treatment. He has had no trouble since. He has no overflow of tears. The instillation of cocain into the nose passed readily through into his mouth. He had the bitter taste. I could discover no opening in the canaliculus. It apparently had closed up. I do not say that that would be the case in many instances, but it certainly was the case in that particular instance. I do not operate on infants; I do not operate in any case when ordinary means will give relief. But I do operate because of the epiphora after they have resisted the ordinary treatment for a great length of time, and I get good results. Refractive errors should be corrected, but you would not expect refraction to cut any figure in a case where you had epiphora on one side. Watering of the eye might be the result of eye-strain. The cause of epiphora, of course, is to be treated until you are thoroughly convinced that there is no way of relieving it; that it will not get well. In the cases where you have an excessive amount of pus in the sac, you will curet the sac thoroughly and you will make your operation as complete as possible. Curet the sac as well as the canal. Restore the normal caliber of the nasal duct. I do not believe that in any of these cases the bony wall of the duct is changed in the least. I think it is entirely possible to restore the normal caliber of the duct by removing it. After you have curetted it out, including the granulations, then make an application of tincture of iodin and you will get results.

POLIOMYELITIS: NEW DEVELOPMENTS IN THE AFTER-CARE AND TREATMENT

BETTER RESULTS IN RESPONSE TO THE DEMAND

CHARLES OGILVY, M.D.
NEW YORK

The care and treatment of poliomyelitic cases has within recent years fallen to the lot of the orthopedic surgeon. For the first time the opportunity of controlling and supervising the treatment of these patients has been given him.

If the responsibility of the final results rests on the shoulders of the orthopedic surgeon and he has the direction of the case throughout its whole course, better results are anticipated and obtained. By this one does not mean to infer that the cooperation of the neurologist, the internist and the general practitioner is not constantly sought and maintained. Their cooperation is necessary in obtaining the best final results, but the problems involved are essentially and specifically those for the orthopedic surgeon to assume and to solve.

A year ago[1] I reported on a group of 110 cases which has been closely followed for one year. A second year of after-care and treatment has since elapsed, and a survey of this year's work reveals a number of very interesting facts which have not been heretofore recorded. In this paper time will permit me to refer to only two essential points, (1) the return of lost function, and (2) the occurrence of deformity.

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[1] Ogilvy, Charles: A Report of a Group of One Hundred and Ten Cases of Poliomyelitis from the Acute Onset to the Present Time, The Journal A. M. A., Sept. 1, 1917, p. 691.

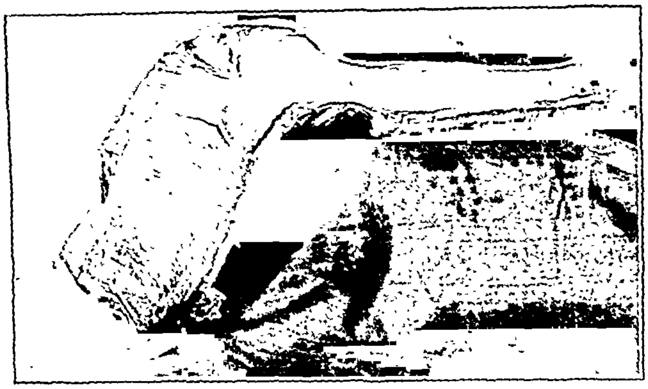

Fig. 1.—Horizontal arm splint for deltoid paralysis. This splint is made of plaster- of Paris and trimmed with adhesive plaster.

In cases of complete flaccid paralysis affecting either a muscle or a group of muscles without any return of function after six months, further treatment is useless so far as the return of function is concerned. The paralysis is permanent in this flaccid type of case in which there is no reestablishment of the communication through the nerve centers of the cord. In my group of cases we have had nine cases in which such flaccid paralysis occurred.

REST AND REST SPLINTS

In the previous paper it was stated that the one greatest factor in obtaining a return of lost function was rest for the muscles affected. I then thought that six months should be the limit of time for such inactivity. I now believe that one year is not any too long for certain cases.

The simplest and most efficient means of obtaining rest is in the use of plaster-of-Paris shell splints. These are light, easily applied, comfortably fitting and the most economical braces we can use.

Of these I wish to call attention to three in particular, first, the arm rest for deltoid paralysis (Figs. 1, 2 and 3). This is a splint in which the arm can be placed in any position necessary. It is bandaged firmly to the body over the clothing and has proved one of the most efficient splints in use. The result has been that of six deltoids primarily involved we have been able to obtain a return of function in all but one case.

The second plaster-of-Paris shell that I wish to mention is one for the spine. The difficulty of preventing a lateral deviation of the spine is very great when there is an inequality of the power of the muscles on either side. Especially is this so after the twelfth month, when it is impracticable constantly to retain the patient in a recumbent position. Figure 4 demonstrates this special brace which I have used. It is a combination of a plaster back and a canvas corset.

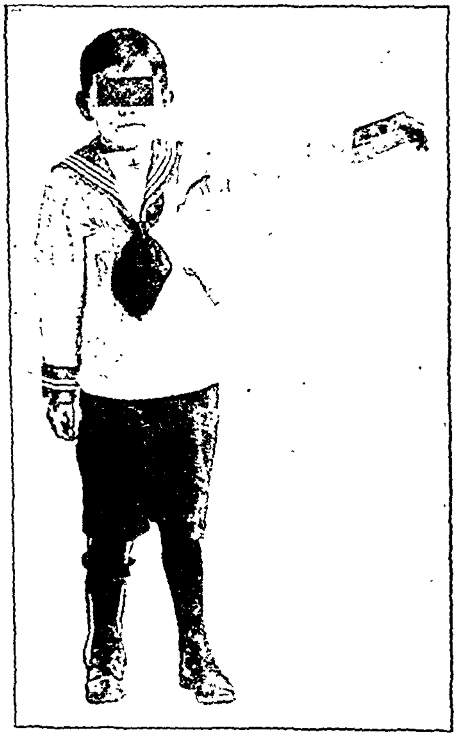

Fig. 2.—Deltoid paralytic splint applied.

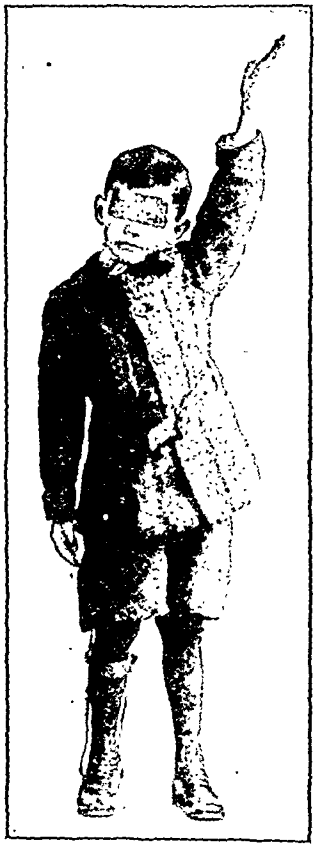

Fig. 3.—Same case; recovery of deltoid.

Emphasis should be made on the necessity of night splints in all cases in which there is a tendency to foot drop or other foot deformity (Fig. 5). Deformities will invariably follow when no such provision is made. One often sees very beautifully applied braces being worn in the day time and the foot allowed to assume positions of deformity during the night. This will ultimately become so marked as to demand operative procedures.

BRACING

There is some controversy and much misunderstanding regarding the employment of braces, both in the profession and among the laity. Some have stated that they "do not believe in bracing." The natural result of such a statement has been that parents have allowed their children to attempt walking without the use of braces, with disastrous results in many instances.

The purpose of braces is to encourage function, not to discourage it, and to prevent deformity. Both of these results are successfully obtained, provided the brace is made sufficiently light. All bracing should be made with as much joint freedom as is consistent with prevention of deformity. It is entirely an erroneous impression that the wearing of a properly applied light brace predisposes to continued weakness of the muscles. This is not the case.

Overfatigue, more than anything else, prevents a return of function, and a proper brace is the best guard we have against overfatigue. It must, however, fit accurately and be as light as possi .

DEFORMIT

There are two deformiti
wish to draw attention.
during the first but d

are those of lateral deviation of the spine and equinocavus of the foot. Either of these deformities may develop gradually as the patient's activities in the sitting and standing posture increase. They are easily accounted for but exceedingly difficult to check. If we could continuously keep these patients on their backs the question would be solved, but this is not practicable. For the milder cases a small light canvas steel corset (as seen in Figs. 6 and 7) with postural exercises has been sufficient to hold these cases in check.

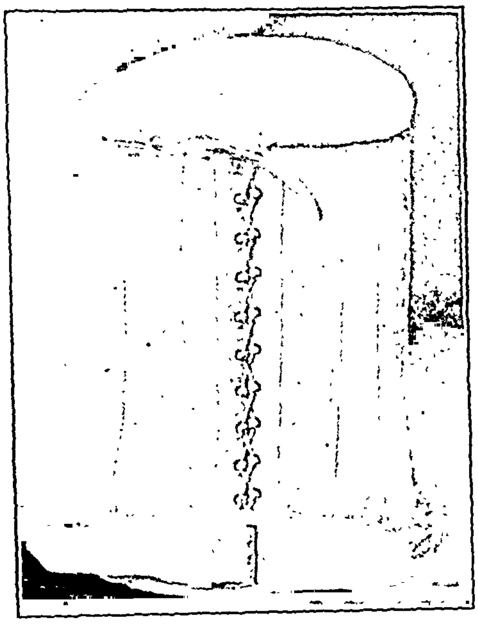

Fig. 4.—Author's plaster-of-Paris canvas corset.

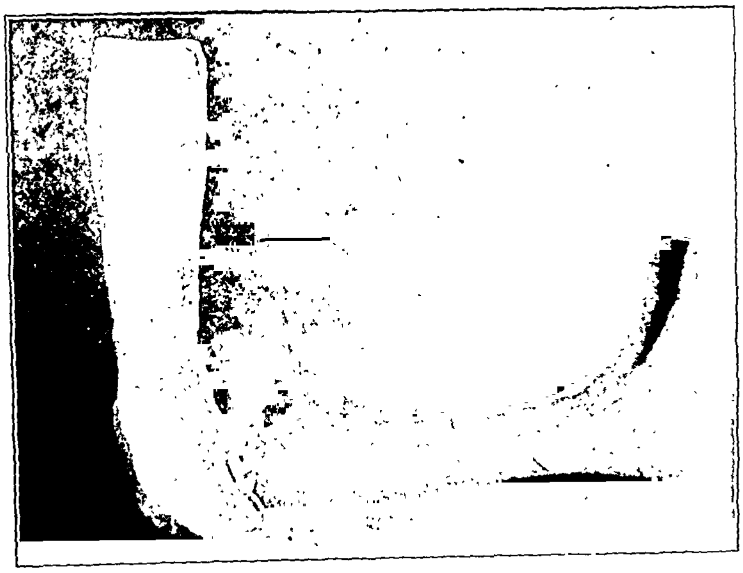

Fig. 5.—Night splints to prevent foot deformities.

The more severe cases have had a plaster-of-Paris posterior shell, splint with a canvas front, as referred to above (Fig. 4). This I cannot too highly recommend, as it has many advantages over the complete plaster-of-Paris corset and at the same time has sufficient corrective force to prevent the development of deformities.

The second deformity referred to is that of equinocavus (Fig. 8). This has developed in two of my cases. In neither of these cases were any of the muscles of the leg completely paralyzed and in neither of them was any deformity whatsoever noted until the twelfth and fifteenth months, respectively, after the acute attack. Note the late date of the development of these deformities. This emphasizes the importance of continuous supervision for at least two years after the onset of the disease.

In cases in which round shoulder, malposture, develops, a shoulder brace should be applied. The lighter and simpler these are, the better. The most efficient is one in common use, which goes very much as a figure-of-eight bandage around each shoulder, being drawn firmly across the back.

MUSCLE TRAINING

I have employed a special muscle trainer whose sole duty it has been to establish systematic muscle training in all cases in which it was deemed advisable. My conclusions in this regard are:

1. The responsibility of muscle training cannot be left to the parents to be properly carried out.
2. Comparatively little value can be obtained by muscle training until the child is over 6 years of age.
3. It should be continued for at least two years.
4. The results obtained are dependent as much on the patient as on the trainer.
5. A great deal depends on the disposition of the child.
6. Muscle training is indispensable in cases in which it is applicable.

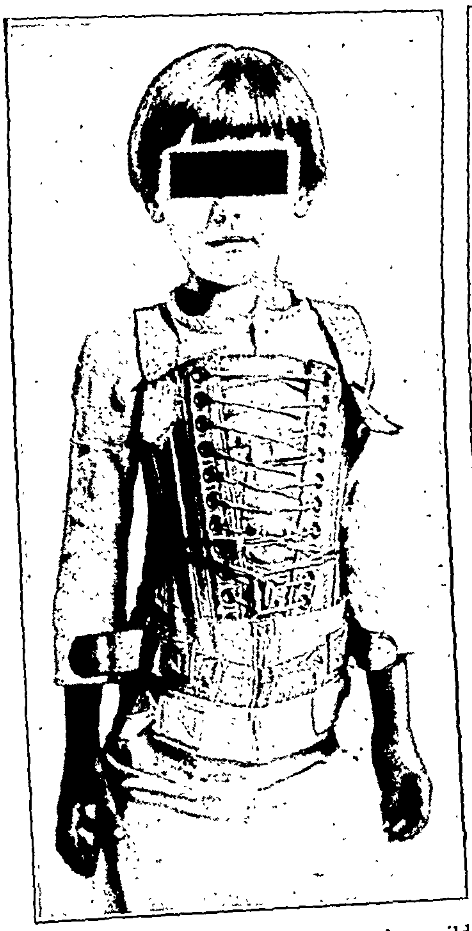

Fig. 6.—Canvas steel corset for mild cases of spinal deformity, front view.

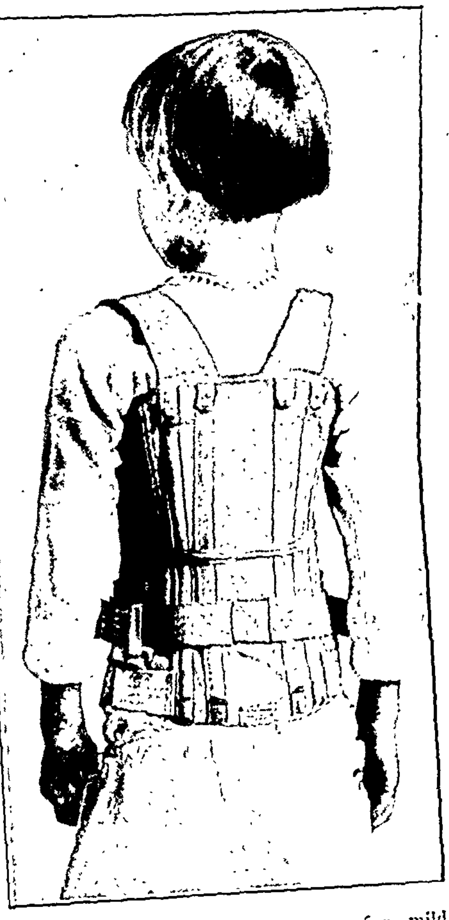

Fig. 7.—Canvas steel corset for mild cases of spinal deformity, back view.

BATH EXERCISES, MASSAGE AND ELECTRICITY

Bath exercises are of the greatest importance and should never be omitted, especially at the stage when the return of muscle function is just sufficient to produce motion. Often such motion is encouraged without fatigue by bath exercises when the same exercises out of the bath would assuredly produce overfatigue. Furthermore, the encouragement obtained by seeing the muscle functionate in the bath is of the greatest value in the development of power. Regular, systematic massage should not be begun before the fourth month. The value of massage is unquestionable. This should be carried on by a skilled masseuse.

Electricity for the purpose of obtaining a return of muscle function has not been used. I cannot see in any instance where it could possibly have resulted in a greater amount of muscle power than has otherwise been obtained.

CONCLUSION

I cannot too strongly recommend that these patients be continuously kept under the same care and supervision throughout. I hope that the work done by myself and others along this line will be of sufficient value to establish a definite course of practical treatment which can be universally pursued in order that the best final results may be obtained in these cases.

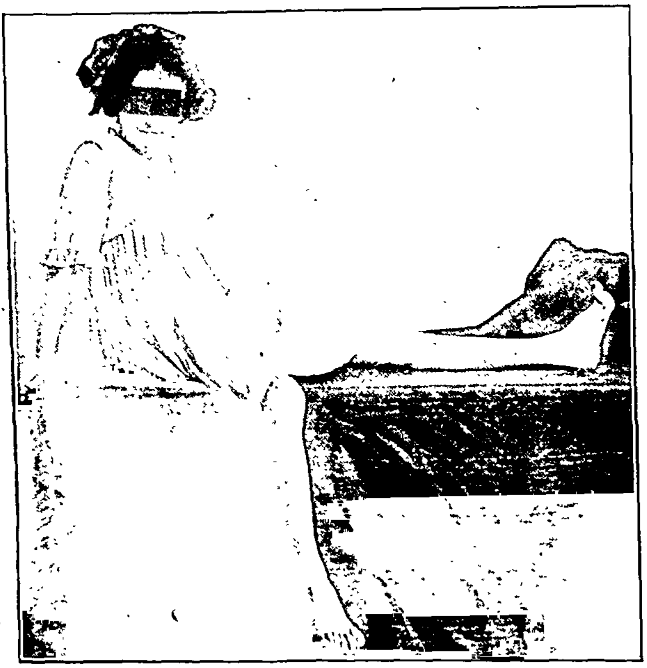

Fig. 8.—Paralytic equinocavus.

40 East Forty-First Street.

The Necessity for Prenatal Care.—In an article on "The State and Prenatal Hygiene" (*British Medical Journal,* Oct. 5, 1918), E. McConnell, M.D., analyzes the death rate of infants under 1 year in the city of Glasgow with reference to the necessity of prenatal care in the interests of the mother, the child and the state. He shows that two thirds of the deaths under 3 months occur in the first month; that in the first week the deaths in both sexes are four times more numerous than in the second week, and about six times more numerous than in the fourth week after birth, while one third of the deaths during the first year occur before the fourth week of life is completed. Adding to these the stillbirths which amount to 4 per cent. of the total births, totalling about 1,200 for Glasgow and about 4,000 for Scotland, McConnell says we have an illustration on a considerable scale of the work to be done by an organized system of prenatal care. These deaths lead directly to the period antecedent to birth and away from the direct influence of environment, and have as their predominant cause what the health officer of Glasgow in a report to the Seventeenth International Congress of Medicine in London in 1913 termed "immaturity" to express the inability of the child to live apart from its mother, and would include infants coming under such designations of disease, etc., as premature, congenital defects, atelectasis, atrophy and debility or wasting diseases.

Military Medicine and Surgery

PHAGOCYTIC EXPERIMENTS IN INFLUENZA

RUTH TUNNICLIFF, M.D.
Contract Surgeon, U. S. Army
CHICAGO

The following experiments were made in an attempt to determine the relation between influenza and the complicating pneumonia and the green-producing streptococcus isolated at Camp Meade, by the late Captain George Mathers.[1] This coccus was isolated from the sputum during life and from the heart's blood, lungs, pericardial and pleural exudates at necropsy.

A report of the bacteriology of the influenza epidemic at Camp Meade was being prepared by Captain Mathers at the time of his death. He isolated a green-producing streptococcus from the sputum in 87 per cent. of 110 cases of influenza and pneumonia examined. The cultures were made on the first or second day of the disease. The influenza bacillus was also isolated in 58 per cent. of the sputum cultures. The coccus appeared in the sputum smears as gram-positive diplococci, 2 microns in length, with slightly pointed ends and a capsule. In cultures they grew in pairs and long chains and showed a capsule. On human blood agar plates the colonies were large (from 0.25 to 0.5 cm. in diameter) green, flat, moist, with regular edges, and had a tendency to become confluent. The colonies often showed umbilication in forty-eight hours. Cultures of this organism were not soluble in bile. They grew as a flocculent growth in glucose and plain broth, the fluid generally not remaining clear. They fermented glucose, lactose and saccharose, but neither mannite nor inulin, except in one instance. Sputum injected intraperitoneally into mice was virulent, killing them within twenty-four hours. These cocci were not agglutinated by type pneumococcus serums.

It is generally recognized that opsonins are the only antibodies easily demonstrated in streptococcus infections. Agglutination tests with the serum of five influenza and two pneumonia patients examined during the attack and convalescence were negative with three strains of this streptococcus, even in so low a dilution as 1:2. Opsonic experiments were therefore made. Sputum strains were generally used, as those isolated at necropsy were usually not phagocytable, presumably because too virulent. *Micrococcus catarrhalis* and *Streptococcus hemolyticus* were used as controls. The influenza bacillus frequently associated with the green-producing streptococcus was not tested at Camp Meade because this bacillus is usually spontaneously phagocytic.[2]

The opsonic power of the blood serum was estimated by the dilution method. The normal and immune serums were diluted with physiologic sodium chlorid solution to determine the point of opsonic extinction—the point at which induced phagocytosis recognizably exceeds phagocytosis with salt solution. Normal human washed leukocytes were used. The mixture of serum, leukocytes and bacterial suspension was incubated at 37 C. for fifteen minutes and the smears then stained with Wright's stain. Fifty polymorphonuclear leukocytes were counted and the number taking part in phagocytosis noted.

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[1] Captain Mathers died October 5, from influenzal pneumonia, contracted while engaged in this work.

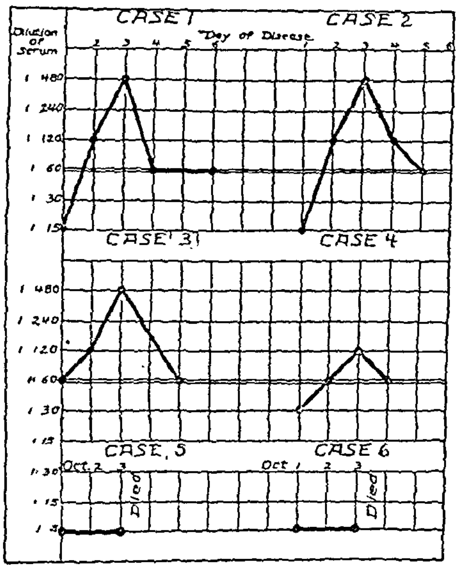
[2] Tunnicliff and Davis: Jour. Infec. Dis., 1907, 4, 66.

The serum of four patients with acute influenza was examined daily for its opsonic power. On the first day of the disease the opsonic content in three was below normal. On the second or third day the opsonic power of all rose well above normal, remaining high a day or two and then returning to normal (Cases 1, 2, 3 and 4 in the accompanying chart).

Ten severe cases of pneumonia following influenza were also examined in the same way. The serum showed little or no opsonins for the coccus (Cases 5 and 6). In two instances the opsonic power increased slightly with improvement in the patients' conditions, decreasing again when the patient became worse. The opsonic power of two patients who recovered returned to normal.

These opsonic changes in influenza and the complicating pneumonia were specific for the green-producing streptococcus, no fluctuations in opsonins being observed with either *Micrococcus catarrhalis* or *Streptococcus hemolyticus*.

Later in Chicago, the serum of [illegible] patient with influenza and [illegible]h influenzal pneumonia [illegible]ined for their opsonic [illegible] for the green-producing streptococcus and the influenza bacillus. Two strains of the influenza bacillus isolated from influenzal pneumonia lungs at necropy [illegible]e used; one showed practically spontaneous phagocytosis, the [illegible] not sufficient to interfere with the experiments. All four patients showed during the acute stage no opsonins for the streptococcus, the point of opsonic extinction for the control being 1:60. One patient died. The serum of the three that recovered showed, as the symptoms subsided, a high opsonic content, the point of opsonic extinction being 1:480, 1:240 and 1:480. The negative phase in these influenzal pneumonias for the green-producing streptococcus is much more pronounced than is generally observed in other acute infectious diseases. None of these serums showed any changes in opsonins for the influenza bacillus.



Cases 1, 2, 3 and 4, opsonin curves for the green-producing streptococcus of the serum of influenza patients who recovered. Cases 5 and 6, great reduction from normal of opsonin for the green-producing streptococcus in fatal influenzal pneumonias. Point of opsonic extinction for normal person 1:60.

On account of the leukopenia in this epidemic of influenza and in the complicating pneumonias, and the frequency of complications, the activity of the leukocytes was also studied. I[2] have previously recorded that the phagocytic activity of the leukocytes is decreased during the leukopenia of measles, and suggested that this might account in some degree for the frequency of secondary infections in this disease.

Suspensions of washed blood containing approximately the same number of polymorphonuclear neutrophils from normal persons and from ten influenzal pneumonia patients were studied. The phagocytic activity of the leukocytes was determined by comparing the number of bacteria ingested under the same conditions by the two sets of leukocytes under the influence of normal serum (cytophagic index). In the case of all patients examined during the leukopenia, the polymorphonuclear cells were found to be less actively phagocytic than normal cells, the average being 0.1, as compared with the normal standard 1.00. In two patients who recovered, the leukocytes became actively phagocytic as their number returned to normal. This decreased leukocytic activity was not specific, the same change occurring with *Bacillus influenzae, Micrococcus catarrhalis* and *Streptococcus hemolyticus*.

CONCLUSIONS

1. Specific opsonins for the green-producing streptococcus isolated from influenza patients developed during the course of the disease.

2. A specific decrease in opsonins for the organism occurs in the pneumonia following influenza. This lowered opsonic power persists unless the patient recovers, when it returns to or may rise considerably above normal.

The changes in opsonic power in influenza and influenzal pneumonia are specific for the green-producing streptococcus, no fluctuations being observed with *Bacillus influenzae, Micrococcus catarrhalis* or *Streptococcus hemolyticus*.

3. These experiments would indicate that the green-producing streptococcus is of some significance in influenza and the complicating pneumonia.

4. Accompanying the leukopenia of influenza occurs a nonspecific decrease in the phagocytic activity of the leukocytes. This decreased activity continues unless the patient recovers, in which case the leukocytes become normally active with the increase in number.

5. It is suggested that the leukopenia and the diminution of the phagocytic activity of the leukocytes in influenza may account in some degree for the severity and frequency of secondary infections in this disease. It is possible that convalescent serum or immune horse serum may be of value in promoting leukocytosis and also in increasing the antibody content of the serum.

Vaccination Against Pneumonia.—The experiments of the Army Medical Corps with vaccination against pneumonia due to the pneumococcus, Types I, II and III, in two of the Army camps have had so much apparent success that a memorandum has been issued to officers, enlisted men, and employees of the War Department, announcing that this prophylactic vaccination is available to all who desire it. At Camp Upton during a period of ten weeks, no cases of pneumonia due to the types of pneumococcus mentioned, occurred among vaccinated troops, and pneumonia due to other organisms was only one tenth as high among vaccinated as among the unvaccinated although previous to vaccination the pneumonia had occurred equally in the two groups. The vaccine employed is a lipovaccine. It is given in a single injection, containing pneumococci, Types I, II and III. Reactions from injections, etc., are, as a rule, less pronounced than after the use of antityphoid vaccination. The vaccination is not intended to cure those who are ill with pneumonia, and it is not advised for persons who are suffering from acute colds or fever.

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[2] Tunnicliff, Ruth: Jour. Infec. Dis., 1912, **11**, 474.

EPIDEMIC OF BRONCHOPNEUMONIA AT CAMP GRANT, ILL.

PRELIMINARY BACTERIOLOGIC REPORT *

EDWIN F. HIRSCH, M.D. (Chicago)
Captain, M. C., U. S. Army
AND
MARION McKINNEY
Chief Technician
CAMP GRANT, ROCKFORD, ILL.

Sept. 21, 1918, an epidemic disease characterized by a sore or dry throat, cough, fever, general prostration, and in a certain number of patients by a rapidly progressing pneumonia, broke out at Camp Grant. While the date September 21 is given as the day of onset during which fifty-six patients were admitted to the base hospital, there had been about fifteen or twenty patients admitted during the three or four days immediately preceding with symptoms identical, and had been considered to have "influenza."

The rapidity with which the disease spread can be appreciated best by reviewing the number of hospital admissions on the days succeeding the onset of the epidemic, indicated in Chart 1. The first death occurred on the third day, and the postmortem examination confirmed the clinical diagnosis of bronchopneumonia. The number of deaths on the subsequent days of the epidemic are indicated in Chart 2. Practically all deaths followed a clinical diagnosis of pneumonia, a diagnosis largely supported by postmortem examinations.

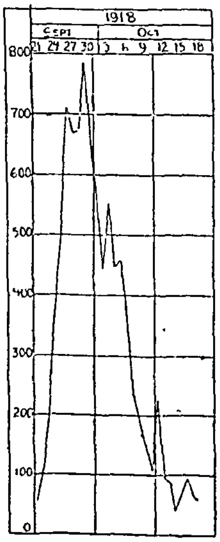

Chart 1. — Admission rate: September 21, 56; 22, 108; 23, 193; 24, 369; 25, 491; 26, 711; 27, 670; 28, 671; 29, 788; 30, 689; October 1, 567; 2, 440; 3, 566; 4, 445; 5, 459; 6, 375; 7, 235; 8, 197; 9, 155; 10, 118; 11, 229; 12, 98; 13, 87; 14, 40; 15, 64; 16, 95; 17, 67; 18, 54.

The arrival in the hospital of a large number of patients with symptoms referable to infection of the respiratory passages suggested at once that the possible or even highly probable portal of entry of the disease-producing organism or organisms was through the nasopharynx, and that a bacteriologic examination of these tissues would demonstrate the variety of bacteria as well as the predominating type of organism, if there be such. Following this as a reasonable basis for investigation, throat cultures were taken on Loeffler's medium from the posterior pharynx of the first 300 hospital admissions and examined after twenty-four hours' incubation. The predominating organisms growing on this medium were gram-positive, usually diplococci as such or in short chains. Following this, 159 throat cultures were taken on blood agar plates in order to differentiate the gram-positive organisms, as well as to favor the growth of the influenza bacillus whenever it would be present. Many of these plates were pure cultures of fine green colonies containing gram-positive diplococci as such or in short chains, frequently lancet shaped. In all throat cultures the occurrence of the influenza bacillus was only occasional, never in pure culture, and, when found, always with a predominating number of diplococci with tinctorial, morphologic and cultural characteristics as mentioned above. A few colonies of hemolytic streptococci were noted in twenty of the 159 blood agar plates, nonhemolytic in not more than twelve.

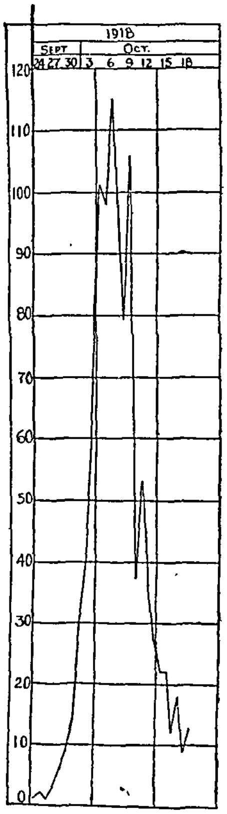

Chart 2.—Death rate: September 24, 1; 25, 2; 26, 1; 27, 3; 28, 6; 29, 9; 30, 14; October 1, 31; 2, 43; 3, 76; 4, 101; 5, 98; 6, 115; 7, 98; 8, 79; 9, 106; 10, 37; 11, 53; 12, 36; 13, 27; 14, 22; 15, 22; 16, 12; 17, 18; 18, 9; 19, 13.

Approximately 200 postmortem examinations were made during the epidemic, and there was found regularly an extensive irregular consolidation of the lungs. The gross appearance of these lungs was striking in that they appeared voluminous and dark red, with much blood and edema. On the pleural surfaces there was little fibrin. The bronchi contained a thin gray or brown fluid and were lined by a red mucous membrane. During the decline of the epidemic, gray nodular consolidations were found, and complications and sequelae of a pneumonia, such as huge serofibrinous pleuritis, empyema, acute serofibrinous and acute suppurative pericarditis, all of these contributing no small part in continuing the mortality.

Cultures on blood agar plates and direct smears on glass slides were made from the exudate of the consolidated lungs at all postmortem examinations. The surface streaks of the blood agar plates frequently were purely fine green colonies containing gram-positive, lancet-shaped diplococci. Organisms resembling the influenza bacillus were rarely found, and never in pure culture.

Heart's blood was taken at each necropsy and cultivated. In a large number the gram-positive organism described above was isolated in pure culture. Blood cultures were made on ninety patients in the hospital and forty-five of them were positive, a gram-positive diplococcus being isolated in pure strain without exception.

Spinal fluid removed at the postmortem examinations and from patients in the hospital has yielded this organism frequently, and it has been cultivated in pure strains from the exudate in the middle ears, from the frontal, maxillary and ethmoidal sinuses. In none of the sinus infections of the head has the influenza bacillus been observed either in direct smears of the exudate or in the blood agar plate cultures.

A large number of strains of this organism have been isolated from the lungs and the heart's blood at the postmortem examinations, and from the circulating blood stream of patients in the hospital. Table 1 contains certain cultural, morphologic and virulence properties for a few from the heart's blood, and Table 2 the same for those isolated from the blood stream of patients in the hospital, while Table 3 lists a few from the lungs. These tables indicate that the gram-positive diplococcus recovered from these fluids and tissues has all the morphologic and cultural characteristics of

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*From the Laboratory of the Base Hospital.

a pneumococcus, at least so far as modern standards of identification permit. They further detail experiments demonstrating the exceedingly great virulence these strains possess for susceptible laboratory animals. A guinea-pig of 328 gm. weight was dead ten hours after an intraperitoneal injection of half the twenty-four-hour growth on a blood agar slant of one of the strains isolated from the heart's blood. The virulence of these strains exceeds by far that known for pneumococci usually associated with disease, and while the organisms meet all the morphologic and cultural requirements of a pneumococcus, this difference in virulence makes them distinctive.

TABLE 1.—HEART'S BLOOD CULTURES, POSTMORTEM

Culture	Inulin Fermentation	Capsule		Bile Solubility	Amount of 1-24 Hr. Blood Agar Slant Injected into W. Mouse	Dose Fatal in Hours	Type	Organism Recovered Pure from Mouse Heart's Blood
		On Blood Agar	In h. b. of Mouse					
1024	+	—	+	+	0.0231	38	II	+
1029	+	—	+	+	0.0231	26	II	+
1030	+	—	+	+	0.0231	31	II	+
1031	+	+	+	+	0.0231	25	II	+
1032	+	—	+	+	0.0231	25	IV	+
1033	—	—	+	+	0.0231	25	IV	+
1034	+	+	+	+	0.0231	25	IV	+
1035	+	+	+	+	0.0231	31	II	+
1037	—	—	+	+	0.0231	27	II	+
1038	+	+	+	+	0.0231	25	II	+
1039	+	—	+	+	0.0231	25	II	+
1040	+	—	+	+	0.0231	24	IV	+
1041	—	+	+	+	0.0231	30	IV	+
1050	+	—	+	+	0.0231	28	II	+
1053	+	—	+	+	0.0231	43	II	+
1056	+	—	+	+	0.0231	21	IV	+

To control these investigations, throat cultures were taken from fifty of the German prisoners confined at Camp Grant. This group of men has escaped entirely the infection, although they have been in the camp since last spring. Colonies of pneumococci were found in twenty of these cultures and isolated in pure culture. White mice were inoculated with half the growth of these organisms on blood agar slants after twenty-four hours' incubation without the slightest effect on these animals.

TABLE 2.—BLOOD CULTURES

Culture	Inulin Fermentation	Capsule		Bile Solubility	Amount of 1-24 Hr. Blood Agar Slant Injected into W. Mouse	Dose Fatal in Hours	Type	Organism Recovered Pure from Mouse Heart's Blood
		On Blood Agar	In h. b. of Mouse					
604	+	—	—	+	0.0231	18	II	+
605	+	—	+	+	0.0231	22	II	+
606	+	—	+	+	0.0231	22	II	+
608	+	—	+	+	0.0231	24	IV	+
610	+	—	—	+	0.0231	18	IV	+
611	+	—	+	+	0.0231	30	IV	+
614	+	—	+	+	0.0231	12	II	+
615	+	—	+	+	0.0231	16	II	+
630	+	—	+	+	0.0231	32	II	+
636	—	+	+	+	0.0231	22	II	+
638	+	—	+	+	0.0231	16	II	+
640	+	—	+	+	0.0231	22	IV	+
646	+	—	+	+	0.0231	18	II	+
651	+	—	+	+	0.0231	68	I	+
654	+	—	+	+	0.0231	22	II	+
655	+	—	+	+	0.0231	14	II	+
660	+	—	+	+	0.0231	30	IV	+
663	+	—	+	+	0.0231	16	II	+
664	+	—	+	+	0.0231	22	IV	+
665	—	—	+	+	0.0231	16	II	+
666	—	—	+	+	0.0231	36	II	+

CONCLUSIONS

1. The epidemic of bronchopneumonia at Camp Grant is due to infection by a virulent strain of pneumococcus.

2. The virulence of this organism exceeds greatly that of strains usually identified in pneumonia.

TABLE 3.—LUNG CULTURES, POSTMORTEM

Culture	Inulin Fermentation	Capsule		Bile Solubility	Amount of 1-24 Hr. Blood Agar Slant Injected into W. Mouse	Dose Fatal in Hours	Type	Organism Recovered Pure from Mouse Heart's Blood
		On Blood Agar	In h. b. of Mouse					
265	+	—	+	+	0.00555	30	IV	+
276	+	—	+	+	0.00555	24	IV	+
287	+	—	+	+	0.00555	18	IV	+
288	+	—	+	+	0.00555	24	II	+
291	+	—	+	+	0.00555	24	II	+
293	+	—	+	+	0.00555	18	II	+
294	+	—	+	+	0.00555	29	II	+
295	+	—	+	+	0.00555	32	II	+
343	+	—	+	+	0.00185	36	II	+
358	+	—	+	+	0.00185	30	IV	+
369	+	—	+	+	0.00185	36	II	+
384	+	—	+	+	0.00555	14	IV	+
398	+	—	+	+	0.00555	23	II	+

3. This virulence is such as to explain the epidemic of bronchopneumonia.

4. *Bacillus influenzae* played no rôle in the epidemic at Camp Grant.

CLINICAL OBSERVATIONS ON INFLUENZA

BERNARD FANTUS, M.S., M.D.
Associate Professor of Therapeutics, Rush Medical College
CHICAGO

The epidemic, or rather pandemic, of influenza through which Chicago has just passed has afforded me an opportunity of making observations that it might be of interest to record, as they were made in family practice, which is not so well represented in medical literature as is that of the hospital, even though the vast bulk of the work of the medical profession lies in the former field rather than in the latter.

One of the startling features of the pandemic was its sudden flaring up and its equally sudden decline, reminding one of a flame consuming highly combustible material, which died down as soon as the supply of the material was exhausted. There is every reason to believe that, within a few weeks of its onset, the infection was universally present in the nose and throat of the people, disseminated by mouth spray given off on talking by innumerable carriers and, in addition, by the coughing and sneezing of the sick. Susceptibility was very general, though it varied greatly in degree. Among those who escaped well marked sickness there are few who could not recall having had an occluded or running nose, or a raw feeling in the throat, or a cough, or aches and pains, at some time during the period of the prevalence of the disease, these probably representing the price such persons paid for their immunization. That blood relationship had something to do with susceptibility was shown by the fact that, in some families, every member developed the disease in well marked form, while in others there was not one definite case, though exposure to the infection had taken place. The very old and the very young showed themselves, on the whole, less susceptible.

In view of this universal prevalence of the infection, quarantine was necessarily useless. During this pandemic, wearing of face masks had no greater prophylactic effect than the liberal consumption of whisky that was indulged in by some for this purpose, or the traditional camphor bags that were found hanging about the necks of so many children sick with influenza. That face masks were useless in protecting one against the infection was shown by the fact that nurses, who of all people were especially given to wearing them, were notoriously prone to become victims of the infection. This is easily understood when we realize that the conjunctiva is continuous with the respiratory mucous membrane and that the eye, unless especially protected, is particularly exposed to bombardment by minute particles in the air. Of course, face masks are useful to protect others against infection by the mouth spray of the wearer.

The symptomatology of the disease was quite multiform. Thus, there were cases that merely showed fever without aches and pains, and others in which there were aches and pains without fever, though generally both were present. Profuse sweating occurred in most cases, increased undoubtedly by the medication employed. The majority of patients coughed, some coughed and vomited, and some vomited and did not cough. The nose was not as frequently affected as were the bronchial tubes. When it was involved, there was a marked tendency to nosebleed. The throat was rarely complained of. Its examination merely revealed hyperemia, and only exceptionally follicular exudate. A few cases of dysenteriform disturbance were encountered. Prostration was generally out of proportion to the height and duration of the fever.

The average duration of the disease in uncomplicated cases was about three days. There was, however, quite a tendency to the occurrence of a relapse, increased, it seemed, by getting out of bed prematurely. The relapse was in some cases more severe than the primary attack, and in others less severe.

Bronchopneumonia was the most important and most serious complication. In every case of pneumonia that I observed in this epidemic, its occurrence was apparently due either to inability or unwillingness, on the part of the patient, to stay in bed long enough or thoroughly enough; or to physiologic handicaps, such as pregnancy, organic heart disease, chronic bronchitis, infancy or old age; or, most especially, to these two influences combined. Over and over again, this was the story: The patient had an ordinary attack of influenza, during which he did not stay in bed continuously. He then felt a little better, got up, and was taken sick again—this time with severe symptoms—and he soon displayed the phenomena of bronchopneumonia. On the other hand, patients who from the beginning of their sickness were kept in bed continuously, and who staid in bed until they had been perfectly well for two or three days, seemed to be quite immune from this complication. If thorough bed treatment of the attack of influenza actually prevents bronchopneumonia, as is my belief, then we must consider this treatment of life-saving importance. How bed treatment might prevent pneumonia, as well as lessen the tendency to relapse, can be understood when we think of an attack of influenza as a state during which the victim of the infection acquires immunity against the organisms that are attempting to invade his system. We have abundant evidence that warmth favors the development of immunity, and that chilling antagonizes it. A patient who is kept in bed at a uniform temperature is therefore in a favorable condition to triumph over the enemy within him. Chilling, on the other hand, weakens the defenses and turns the tide of battle against the patient. Sweaty skins and wet garments predispose to chilling. Thus it is easy to see why the freely perspiring influenza patient must be particularly susceptible to chilling. Especially critical is the period when the patient's temperature is just falling to, or below, the normal. He is then commencing to feel fairly well, and sees no reason for staying in bed. With skin and garments wet with perspiration, he gets out of bed, but soon returns, chilly and miserable, having lost the immunity that was just becoming established. A relapse or an attack of bronchopneumonia is the result.

The time the patient should remain in bed might be placed, for mild cases, at from two to three days, counted from the time the patient has commenced to feel perfectly well for a whole day. For severe cases, and in handicapped patients, or when fine crepitant râles continue to be heard in the chest, the time taken for full establishment of convalescence should be considerably increased.

As it is important to protect the patient against chilling, use of the bed pan and of the urinal must be insisted on. This also prevents the fainting on going into the toilet room that occurred in quite a number of cases. It is no less important to keep the patient's garments and bedclothing dry. The danger of wet clothing is best appreciated when it is realized that a person wrapped in wet fabric loses heat faster than the same body would if it were naked. To keep these profusely perspiring patients dry is quite a task, which should, however, be faithfully carried out by the nurse, who, on removing the wet garments, should rub the patient dry with a warm towel and apply warm, dry clothing, all this being done under covers. The proposition of keeping the patient warm must not be carried out to the extent of keeping the patient hot. The temperature of the sick room should not exceed 70 F. Nor does this proposition militate against free ventilation, provided this is carried out so as to admit fresh air liberally into the room without exposing its occupants to the danger of chilling. For most of these cases, good nursing was more important, as well as more difficult to secure, than good doctoring. This pandemic occurring at a time when there was such great scarcity of trained nurses, on account of the war, brought home to us how necessary it is for every woman—and every man—to be at least somewhat skilled in nursing the sick.

In view of the absence of specific treatment, the therapy of this disease had to be symptomatic. This form of therapy—often disdainfully characterized as "merely symptomatic"—represents, in my view, the very acme of the medical art. Perhaps, if we would instead use the term "functional therapy," as has been suggested, its significance and importance would be better appreciated. It is our duty and privilege to take care of the derangements of the patient's functions while his system is fighting the infection. Since these derangements were of most varied character and intensity, such a thing as a routine treatment of influenza is obviously an absurdity.

The symptom that perhaps attracted most therapeutic attention, and probably least deserved it, was the fever. This was rarely high enough to be of detriment to the patient. When it became too high—exceeded, let us say, 104 F.—it was easy to reduce it by hydrotherapy or by antipyretic medication. On the other hand, a proper object of therapeutic attack were the pains and aches to which so many of these patients were subject. It was their analgesic, rather than their antipyretic action, that rendered various coal-tar derivatives so useful in this condition. It made very little difference whether acetylsalicylic acid or other salicylate, acetphenetidin, antipyrin or pyramidon were selected, provided the proper dose was chosen, namely, the smallest possible dose adequate to produce the desired result. I have seen as little as 0.12 gm. of acetphenetidin or of pyramidon, when given every hour, followed within a few hours by complete relief of the discomforts against which they were administered. The chief disadvantage of all these bodies is their great sudorific action. This at times made the patients more uncomfortable than the aches against which they were used. Hence, when great pain was complained of, and its antitussic action did not render it contraindicated, I have added an opiate—generally codein phosphate, 0.03 gm., to each dose of pyramidon—rather than to increase the dose of the coal-tar analgesic. It is a somewhat disagreeable thing to reflect on that this treatment might make the patient feel so comfortable that, considering himself well before he really is, he may interrupt his bed treatment prematurely and thus invite occurrence of relapse or even of pneumonia.

The proper management of the cough is probably of fundamental importance. If retention of secretion and clogging up of bronchioles favors the development of bronchopneumonia, as it is only reasonable to believe, then favoring expectoration may save life. It has been my good fortune to come across a number of patients in whom, from the rapid and distressed breathing, the almost nonproductive cough, and the innumerable fine râles in the chest, one feared the onset of pneumonia, that cleared up phenomenally, within a couple of days, under the influence of iodid coupled with the liberal ingestion of fluid. In milder cases, I have used, as expectorant, ammonium chlorid in doses of 0.3 gm. prescribed with a flavoring syrup vehicle and taken in half a tumblerful of water, every two hours. But, when the more serious nature of the case demanded a more drastic action, or when the patient obtained no relief from the ammonium chlorid, I have nearly always succeeded in securing a satisfactory result by the addition of 0.12 gm. of sodium iodid to each dose of ammonium chlorid, given in cases in which prompt action seemed urgent every hour, and later, every two to four hours. The interval between the doses is increased as expectoration or nasal discharge become freely established. Reasoning and clinical observation have led me to believe that any expectorant given for the purpose of loosening secretion is likely to be disappointing unless its administration is accompanied by the liberal ingestion of fluid. Hence I have urged the ingestion of a tumblerful of fluid every hour, while the patient is awake, having the patient take a tumblerful of milk or other nutritious fluid every two hours, and a glassful of lemonade, grape juice and water, seltzer water, or other drink every two hours, alternating with the milk. When the secretion has become profuse, an aromatic expectorant like creosote carbonate would seem to be indicated. However, in these cases I have found this agent unsatisfactory. In a number of instances, discontinuance of the iodid and use of creosote carbonate in 0.3 gm. doses every four hours was followed by prompt aggravation of the cough and increase in the number of râles heard in the chest, as well as the reappearance of fever. I therefore now reduce the daily dosage of iodid very gradually instead of stopping it abruptly, and have not employed creosote carbonate of late, even when the expectoration has seemed excessive. I believe that the prescribing of an opiate, whether by itself or in complex cough syrups, is pernicious practice, a direct invitation to the onset of bronchopneumonia. An exceptional case may be found now and then, in which a patient with a chest free from physical findings is kept from sleep by a useless, absolutely nonproductive cough. In such a case, a sufficient dose of codein, 0.03 gm. every hour at bedtime for a few doses, secures a good night's rest; and the ingestion of a dose every four hours during the day maintains comfort. When, however, the cough is at all productive or there are râles in the chest, experience has made me afraid to prescribe opiates in any form or any dose. Even if the opiate is not followed by the development of bronchopneumonia, it will prolong the duration of the trouble, as the harassing cough returns as soon as the opiate is stopped. Should the cough be excessive and interfere with sleep, it is well to try to lessen the nervous excitability by means of bromid, which may be given combined with the iodid.

Insomnia should not be permittted in these patients for more than one night. Since sleep is as important as food for the maintenance of strength, and as we never know at the beginning how long the case may last or how serious it may become, it is, to say the least, prudent to procure sleep for the sufferer. The sleep must not be sufficiently profound or continuous, however, to abolish coughing for many hours. I have found it convenient to carry with me 0.3 gm. barbital tablets and to have the patient who has difficulty in going to sleep take one at bedtime, to be repeated in two hours if he is not yet asleep. As barbital has not proved uniformly successful, I have prescribed with more complete satisfaction in those cases in which barbital failed, 0.3 gm. of chloral hydrate to be repeated every hour until the patient is asleep. Of course, the chloral could not be used in patients with enfeebled circulation.

A tendency to vomiting on slight provocation was so generally present, especially in children and young women, that it was found wise to limit the patient to liquid diet. Eating crackers or an apple has precipitated an attack of emesis. Medicine was also likely to do this, especially the administration of ammonium chlorid. Hence it is well to start this medication cautiously in those predisposed to emesis, by giving at first one-fourth and later one-half the desired dose and not going up to the full dose until one feels confident that it is likely to be tolerated. With some patients, vomiting was a prominent and distressing symptom. In such cases, twenty-four hours of complete rest to the stomach, even to the extent of limiting the ingestion of water to teaspoonful doses every fifteen minutes and withholding all medicine, usually controlled the difficulty. To prevent dehydration of the system and the development of acidosis, as well as to favor expectoration, retention enemas of 250 c.c., or of as much as the patient could hold, of physiologic sodium chlorid solution with sodium bicarbonate, two teaspoonfuls to the quart, were used from every four to eight hours, the shorter intervals being employed when the amount that could be retained was rather small.

It would consume too much space to describe in detail all the other measures that were found useful: such as prolonged irrigation of the auditory meatus with hot water followed by hot glycerin for earache, the use of menthol for the rhinitis, or of the potassium chlorate-ferric chlorid gargle for sore throat, when disturbance of these parts was prominent; strapping the lower border of the ribs with adhesive plaster for pain and soreness due to strain from coughing, and the application of the ice bag for excessive headache, or mustard poultices to especially sore areas elsewhere. The employment of cathartics was, of course, quite generally required. Solution of magnesium citrate was so popular for this purpose that druggists could hardly put it up fast enough during the pandemic to keep ahead of the demand.

I am fully aware of the fact that the great shortcoming of such reports as this one is its lack of numerical data and hence of definiteness, and the consequent difficulty of arriving at scientific conclusions. Even though the observations laid down were made in more than a thousand cases of influenza, many of these were seen only once. Hence it is impossible to be certain of the subsequent course in a considerable number of these cases. Some of these patients may subsequently have developed pneumonia and called another physician. Among those treated from the very beginning, whose subsequent course was known, bronchopneumonia occurred in four cases.

One patient was a pregnant woman who did not stay in bed during the first febrile period, because for a part of the time she had to take care of herself and of a sick baby. She recovered.

One patient, a young foreigner, came to my office with a temperature of 103 F. When he arrived home with instructions that he must go to bed and stay there, his wife turned him out of the house, saying that she had to look out for herself and her children. He stayed without care in a rooming house for three days, and when I saw him again he had a violent hemorrhagic bronchopneumonia from which he died.

A young man with valvular heart disease, who was taken care of by his mother and who refused to stay in bed for evacuation of urine and feces, developed pneumonia and died from it within five days of the beginning of the disease.

An old woman, who probably stayed in bed from the commencement of her illness, developed an extensive bronchopneumonia involvement from which she died after ten days.

In nearly every instance of about twenty-five cases of bronchopneumonia seen for the first time after the establishment of this complication, there was a history of incomplete bed treatment; and, in some, considerable evidence that the physician previously in charge had used an opiate.

SUMMARY

Bronchopneumonia, the great cause of death from influenza, is probably in a considerable proportion of cases a preventable complication.

The prevention of bronchopneumonia rests chiefly on the enforcement of sufficiently thorough and prolonged rest in bed, and the favoring of free expectoration by the copious ingestion of fluid and perhaps the use of iodid and the avoidance of opiates.

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ACUTE VEGETATIVE ENDOCARDITIS WITH MULTIPLE SECONDARY FOCI OF INVOLVEMENT

DUE TO MICROCOCCUS PHARYNGITIDIS-SICCAE[*]

OSCAR T. SCHULTZ, M.D. (Chicago)
Captain, M. C., U. S. Army
CAMP JACKSON, COLUMBIA, S. C.

Medical work in the armies of this country and of European countries has brought to light, not only new diseases, like trench fever, but also manifestations of infectious agents previously infrequent in civil life. As examples of the latter may be mentioned the increasingly great importance of the hemolytic streptococcus as a cause of pneumonia and of empyema in this country during the past winter, and the causation of bacteremia and other conditions by *M. catarrhalis,* previously considered almost if not quite harmless, as reported by British army surgeons. Of a similar nature, that is, a fatal infection by an organism ordinarily a harmless parasite, is the case reported herewith. Terminal infection by *B. coli* and other normally nonpathogenic bacteria occurs frequently enough in individuals whose resistance has been weakened by other disease. In the case reported the organism concerned has probably never before caused an infection of the kind described, and the infection occurred in an individual who was doing full military duty and who was not weakened by any other disease condition.

REPORT OF CASE

Clinical Course.—A private, white, aged 25, a member of the Headquarters Company of the Military Police was admitted to the base hospital, Camp Jackson, July 25, 1918. The family history was negative. He had had pneumonia in 1913; otherwise the previous history was negative. Particularly is it to be noted that he had never had rheumatism. July 17, while in the city of Columbia, he complained of headache, fever, and pains all over the body. He remained in the barracks until July 22, when he reported for duty. July 24, he was drenched in a storm. He reported at sick call next morning, complaining of pains and aches all over the body, and was sent to the base hospital. On admission the lungs and abdomen were negative. Old herpes labialis was present. The heart was not enlarged, the sounds were of good quality, and a loud systolic murmur was present at the apex. On the four days following admission the clinical record makes no note of anything of importance except fever. July 30, petechial spots were noted on the abdomen. July 31, the following notes were made by Major W. W. Herrick, Chief of the Medical Service:

> "Mentally alert. Does not look very toxic. Heart: Apex difficult to locate, apparently in nipple line; right border 1½ inches from midsternum; at apex a loud, rough, blowing systolic murmur, heard in the left axilla and also all over the precordium. Lungs clear. Spleen felt one-half inch below ribs. . . . Profuse petechial eruption over trunk and extremities. A few on the conjunctiva and one on the hard palate."

The diagnosis at this time was septic endocarditis, probably streptococcic. August 1, there was shortness of breath and cyanosis of the finger tips. August 2, the petechial rash was very general over the trunk, and the systolic murmur at the apex was harsher and louder than before. On this day he became irrational. August 3, the pulse was weak, rapid and thready, and the patient was irrational and unconscious. He died at 4:15 a. m., August 4.

Repeated examinations of the blood for malaria were negative. Blood cultures were made, July 30 and August 2. Each of these gave a pure culture of a gram-negative diplococcus that was not agglutinated by polyvalent antimeningococcus serum. August 1, the urine contained a few pus cells and red blood corpuscles. Examination of spinal fluid removed, August 2 showed a trace of globulin, pus cells, but no organisms. The white blood count is given in Table 1.

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[*] From the laboratory of the Base Hospital, Camp Jackson, Marshall A. Barber, Captain, S. C., U. S. Army, Chief of Laboratory.

TABLE 1.—WHITE BLOOD COUNT

Date	Total	Small Mononuclears Per Cent.	Large Mononuclears Per Cent.	Polymorphonuclears Per Cent.
July 26	18,000	7	3	90
July 27	16,000	10	2	88
July 29	20,600	14	..	86
Aug. 1	29,200	9	..	91

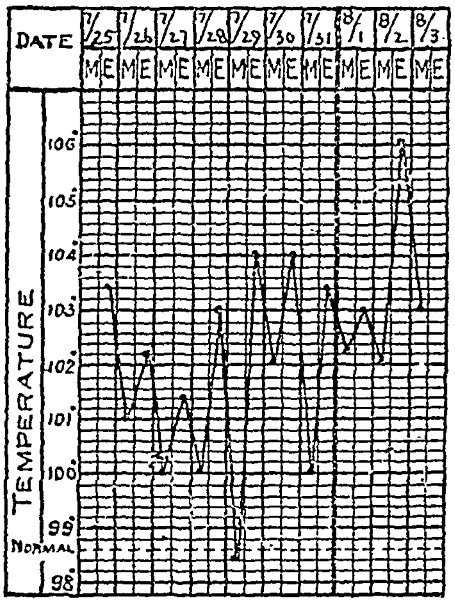
The course of the temperature is shown by the chart.

Necropsy.—The examination was made six hours after death.

External Examination: In the skin of the arms, chest, abdomen and neck were a number of sharply defined, bright red petechiae from 1 to 2 mm. in diameter. These were most numerous in the skin of the neck.

Internal Examination: The peritoneal, pleural and pericardial cavities were free of excess fluid. In the parietal peritoneum were a number of petechiae, of the size and appearance of those of the skin. A few similar lesions were present in both parietal pleurae, and they were more numerous in the parietal pericardium, especially that over the diaphragm, than in the pleurae or peritoneum.

Heart: On the anterior surface of the heart was an irregular milky spot. The right auricle and ventricle were distended. The apex extended to one finger's breadth beyond the left nipple line. The tricuspid and pulmonic valves were normal. On each segment of the mitral valve, where the segments come together anteriorly, was a mass of pale, wartlike or papillomatous vegetations, each mass measuring about 1 cm. in diameter. Some of the wartlike outgrowths making up these masses were attached by very slender peduncles. On the chordae of the posterior segment, beneath the free margin of the latter, was a third group of similar nodular vegetations. The vegetations were rather soft. The aortic valves and the root of the aorta were normal. Over the apex of the left ventricle, the tissue appeared congested through the epicardium. On section through this region, the heart wall contained two poorly defined, irregularly outlined areas, lying very close together and each about 1 cm. in greatest diameter, in which the heart muscle was pale and opaque. The opaque muscle was surrounded by a narrow zone of deeply congested tissue.



Course of the temperature.

Spleen: This was about three times the normal size. The capsule was thin, smooth and glistening. Through the capsule the tissue of the convex surface near the upper pole had a mottled appearance. On section this region was poorly defined, occupied about one-fourth the long axis of the spleen, and the tissue was paler and cloudier than the rest of the tissue, which was grayish red. At the middle of the long axis of the spleen was a second small area similar to that described.

Liver: The size, consistency and external surface were normal. Scattered about on the cut surface after section were a number of opaque, yellowish spots, from 0.5 to 1 mm. in diameter.

Kidneys: These were slightly increased in size. The capsule of each was thin and was easily removed. After the capsule was removed the surface of each kidney showed numerous dark red areas from 0.5 to 2 mm. in diameter. At the anterior surface of the upper pole of the left kidney was an irregularly shaped area 5 cm. in greatest diameter, which was centrally pale and peripherally dark red. The middle of the convex border of the left kidney showed a similar area 1.5 cm. in greatest diameter on the surface, and the upper pole of the right kidney contained a similar lesion. On section the small, deep red areas noted on the surface extended downward through the cortex as narrow, deep red wedges. The larger areas were centrally opaque, surrounded by intensely congested tissue, and extended entirely through the cortex. The cortical tissue between the lesions was opaque and cloudy. The pelves and ureters were normal.

Gastro-Intestinal Tract: The intestine, in situ, showed through the peritoneum a number of dark red, fairly sharply outlined, round areas from 0.5 to 1.5 cm. in diameter. In the intestine after removal were found large numbers of these areas, and they were present throughout the intestine from the duodenum to the sigmoid. They tended to be arranged in groups of from two to four or five. Some had shotlike, firm, slightly raised, opaque, grayish centers about 0.5 mm. in diameter. Except for these lesions the gastro-intestinal tract appeared normal.

Microscopic Examination.—Lung: In areas which usually comprise several lobules the tissue was consolidated. At the center of such areas was a bronchus whose epithelium was partly desquamated and whose lumen was filled with pus cells. The alveoli surrounding the bronchus were filled with polymorphonuclear leukocytes, and the septal capillaries were distended with blood. Farther out, the air spaces were filled with red corpuscles. No fibrin was present. Between the consolidated areas the lung tissue was normal.

Heart: In sections from the margins of the infarcted areas of the left ventricle, the muscle cells nearest the lesion were granular and necrotic. Their nuclei were partly pyknotic and partly fragmented. Farther away from the infarct the muscle fibers were swollen and faintly stained. The stroma between the muscle tissue was edematous. One section contained a large vein, cut in cross-section, which was markedly involved. At one point the intima was replaced by a nodular area composed of necrotic connective tissue infiltrated by polymorphonuclear leukocytes. At another point the wall, in an area comprising about one-fourth the circumference of the vessel, was completely necrotic throughout its entire thickness. The tissue surrounding the vessel was necrotic, and was densely infiltrated by polymorphonuclear leukocytes.

Mitral Valve: The tissue of the valve was edematous and contained young connective tissue nuclei, together with a few lymphocytes. Just beneath the vegetation the tissue was partly necrotic and was densely infiltrated by polymorphonuclear leukocytes, the involvement extending through the thickness of the valve into the muscle tissue. On the free surface of the valve the vegetation was attached by a broad base. It was composed almost wholly of irregularly shaped masses of bacteria, which gave to the vegetation under low magnification a cauliflower-like appearance. Between the masses there was structureless, granular, eosin stained material which did not take the Weigert fibrin stain and which contained a few polymorphonuclear leukocytes. On the free surface of the vegetation was a thin layer of similar material which contained red corpuscles. In sections stained by the Gram-Weigert method the bacteria were unstained, with the exception of a few coccus-like bodies in a few of the colonies at the upper part of the vegetation. In sections stained with methylene blue the bacteria were stained, and the masses were composed of cocci arranged in pairs.

Spleen: The infarcted tissue was hemorrhagic, many of its nuclei were fragmented, and it contained polymorphonuclear leukocytes. Numerous polymorphonuclear leukocytes were present in the pulp of an accessory spleen that was present and not infarcted.

Liver: The liver cells were swollen and finely granular. A few contained bile pigment. In a few widely separated, small, sharply defined areas, the liver cells stained faintly, and their cytoplasm was finely vacuolated. A few lymphocytes were present in the interlobular stroma.

Kidney: In the convoluted tubules the epithelium was so swollen as almost to obliterate the lumina. These cells were granular, and a few had lost their nuclei. The glomeruli were swollen, and their capillary loops were indistinct. In an occasional glomerulus one or more loops were granular, necrotic and deeply eosin stained. In some glomeruli the capsule was distended, and the space contained granular material. Many of the tubules in the medulla contained free red corpuscles. The tissue of the larger infarcts was completely necrotic. Peripherally the necrotic tissue was richly infiltrated by polymorphonuclear leukocytes. In the uninfarcted tissue, small, sharply defined collections of pus cells were present. At the center of some of these abscesses a small blood vessel filled with polymorphonuclear leukocytes could be seen. Situated at the side of one vessel was a larger abscess, at the center of which was a colony of bacteria that had the same appearance and staining reaction as the colonies in the valve vegetation.

Suprarenal: The stroma of the cortex was edematous. In the medulla of one suprarenal was a small abscess.

Intestine: In a section through one of the lesions of the small intestine, a dense collection of polymorphonuclear leukocytes and lymphocytes was present in the submucosa. The veins of the surrounding tissue were markedly distended, and free blood was present in the submucosa.

Diagnosis.—The pathologic findings were: Acute vegetative mitral endocarditis. Septic infarction of myocardium. Recent infarction of spleen. Multiple hemorrhagic septic infarcts and multiple white infarcts of both kidneys. Multiple hemorrhagic septic infarcts of intestine. Multiple petechiae of the skin, pericardium, pleura and peritoneum. Cloudy swelling of the myocardium, liver and kidneys. Multiple focal necroses of the liver. Purulent bronchitis and bronchopneumonia. Abscess of the suprarenal medulla. Macula albida of the heart.

Bacteriology.—Blood culture on two occasions during life gave each time a pure culture of a gram-negative coccus which was not agglutinated by polyvalent antimeningococcus serum. At necropsy, cultures were taken from the heart's blood and spleen. Gram-negative diplococci were present in smears from both situations, but the cultures remained sterile, probably because of the use of old mediums. One of the mitral valve vegetations was removed, washed thoroughly in sterile salt solution, ground in a mortar with a small quantity of sterile saline, and a loopful spread on a blood agar plate. Numerous colonies, all of the same organisms, developed. These, at the end of twenty-four hours, were from 0.5 to 2 mm. in diameter; they were slightly irregular in outline but had smooth borders. They were raised, glistening and grayish, with a flattened surface. The colonies were dry and came off in scalelike masses. No pigment was formed, even after prolonged growth. The organism of these colonies was a gram-negative coccus, occurring singly and in pairs, which showed some variation in size. It was identical in morphology and in staining reactions with the coccus obtained in blood culture. A pure culture of the latter and a pure culture from one of the heart vegetation colonies were run through various mediums together, with the results given in Table 2.

TABLE 2.—RESULTS OF CULTURES

	Glucose	Saccharose	Maltose	Inulin	Mannite	Litmus Milk
Culture from blood during life....	Acid	Acid	Acid	0	0	0
Culture from heart valve vegetat'n.	Acid	Acid	Acid	0	0	0

On all solid mediums, the blood culture organism and that from the heart vegetation were characterized by their dry surface growth, which was luxuriant and came off in crustlike flakes. In broth, white, opaque, round masses developed at the surface and on the sides of the tube at the surface. Later the masses fell to the bottom, forming a heavy, cottonlike sediment, the supernatant fluid remaining clear. The bacteriologic diagnosis was *M. pharyngitidis-siccae* from both blood culture and heart vegetation.

COMMENT

In its clinical and pathologic features this case reproduces the conditions usually caused by a virulent streptococcus. A streptococcus could not, however, be cultivated from the blood during life or from the vegetations after death, and no streptococci could be found in the tissues. The only organism cultivated during life and from the necropsy was the gram-negative coccus described, and the blood culture organism and that from the vegetations were identical in every respect. Furthermore, the vegetations were made up of gram-negative cocci. The conclusion which it would appear necessary to draw is that this organism was the causative agent of the infection. Morphologically and culturally the coccus had the characteristics of *M. pharyngitidis-siccae*. Meningococcus and gonococcus, which would be more apt to produce the lesions found, can certainly be excluded. It was at first thought that the organism might be *M. catarrhalis*, but the sugar reactions excluded this also.

The beginning of an infection by such a normal, harmless inhabitant of the throat is difficult to explain. That such an organism should enter the blood stream directly and cause an acute endocarditis and a fatal infection appears improbable. The lungs were the seat of an acute purulent bronchitis with bronchopneumonia. This lesion, from its bronchial and peribronchial distribution, was apparently not hematogenous in origin, as were the lesions of the kidney, intestine, skin and serous membranes. The bronchopneumonia escaped detection during the course of the disease, none of the progress notes of the case indicating the presence of this condition. Although the clinical record states that on admission the lungs were clear, it is possible that the lesion may have been present at this time and may have escaped detection, since the islands of lung tissue involved were small. It would appear most probable, therefore, that the beginning of the infection was a bronchitis with bronchopneumonia, and that from the involved lung tissue the blood stream became invaded. With localization of the cocci on the mitral valves, the further course of the infection followed logically enough.

SUMMARY

A case of acute malignant vegetative mitral endocarditis in its clinical course and in its pathology simulated an endocarditis due to hemolytic streptococcus.

The causative organism was a gram-negative diplococcus, which culturally was *M. pharyngitidis-siccae*, ordinarily a nonpathogenic inhabitant of the throat.

The organism was obtained in pure culture from the blood on two occasions before death, and from the heart valve vegetations after death.

The inception of the infection was probably an acute purulent bronchitis with bronchopneumonia.

Low Blood Pressure and Oxygen Supply.—If hemorrhage complicates a low blood pressure, the critical level is higher than if no hemorrhage has occurred; thus, if an animal has lost 20 per cent. of its blood volume, the mean arterial pressure can not be lowered to 80 mm. without indications of an inadequate oxygen supply to the tissues.—*Review of War Surgery and Medicine.*

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SATURDAY, NOVEMBER 23, 1918

WAR GASES AND CHEMICAL WARFARE

The effective use of gases in warfare dates from the spring of 1915, when the Germans first used this hideous weapon on Canadian troops on the western front in France. The idea of the employment of poisonous gases against an enemy had been proposed to the British War Office many years ago, but the decision was reached, in accord with present-day considerations of humane procedure, that it should not be adopted.[1] The Teutonic return to barbaric methods compelled the Allies to adopt retaliatory measures; as a result, with hundreds of American as well as foreign chemists engaged in the chemical warfare service, the German plan of gas attack proved to be a veritable boomerang.

The first gas to be used against the forces of the Allied countries was the poisonous chlorin, which was released from cylinders in the front line of trenches. The gas cloud became a weapon by being rolled along the ground by the wind. For obvious reasons this uncertain mode of gas attack was soon replaced by the use of large shells filled with liquefied products. Several dozens of substances, not all of which are true gases, have already been employed in chemical warfare, so that few persons realize precisely what may be included in the expression "war gas." Lieut.-Col. Wilder D. Bancroft[2] has lately explained the import of this flexible term. The substance, he states, may be a liquid, a solid, a vapor or a true gas. It must, however, have some striking characteristics: it must be poisonous or produce tears (lacrimation); or it must give rise to nausea, sneezing or blisters, have a foul smell though otherwise harmless, or be a smoke with obscuring powers. Of course, it may have any or all of these properties combined.

Obviously a high degree of toxicity is a desideratum in those substances that are intended to damage the enemy by chemical rather than by mechanical means. Bancroft assures us that nowadays no one would consider as a toxic substance anything that did not kill dogs in thirty minutes at a concentration of 1 mg. per liter. It is effective concentration, he adds, that is overlooked by persons who suggest new gases or methods of using old ones. Lacrimatory substances should be effective at concentrations as low as 0.01 mg. per liter. The best are much better than this.

Gas warfare created entirely new problems for us in America. Means of defense against the new menace were the first to be provided. Foremost here was the production of suitable gas masks to meet each new sort of emergency. Then remedial measures for those afflicted had to be sought in what was practically an unexplored terrain of therapy. Thus there were created divisions of the service to study the pharmacology, pathology and therapeutics of poisonous gases. And our forces were not idle in the search of new weapons in this field. Hence a toxicologic section was organized under the leadership of Professor Loevenhart to test the deadly efficiency of the new discoveries. Such activities as the search for raw materials to produce novel products in enormous quantities, perhaps hundreds of tons, the invention of workable modes of manufacture and devices for loading and shipping shells and other containers, and the provision of protection for the workmen in the industrial plants have engaged the best talent of trained men. Science, recognized at length as a potent force and awakened to a realization of its duty, became rampant for success in outwitting the Hun.

SOME FACTORS IN GASTRIC SECRETION

It is many years since the performance of gastric analysis, made possible by the successful introduction of the stomach tube into clinical diagnostic routine, has become an indispensable feature of medical practice. Strangely enough, the technic of this mode of examination has progressed far more rapidly during the intervening period than has the understanding of the fundamental physiologic functions on which the practice of gastric analysis is really based. Decade after decade has witnessed the collection of such facts as the varying acidities and enzymatic powers of collected specimens of gastric contents, while the problems of secretion, absorption and related factors have awaited more satisfactory solutions than those propounded by the usual textbooks of gastroenterology. The mechanism of the movements of the stomach have been elucidated to a far greater degree, thanks to the introduction of roentgenoscopic methods of investigation, than has the chemical physiology of the secretory phenomena.

The discovery of the existence of secretion-promoting hormones, or secretagogues, has paved the way to a clearer insight into long known facts. Thus it was appreciated even before the pioneer experiences of Pawlow that water is a gastric stimulant. Bergeim,

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[1] This statement is made on the authority of Prof. J. S. Ames: The Trained Man of Science in War, Science, *Oct. 25, 1918, p. 401.*

[2] Bancroft, W. D.: Chemical Warfare Research, Jour. Indust. and Engin. Chem., 1918, **10**, 785.

Rehfuss and Hawk,[1] who have devoted considerable attention to the response of the human stomach to water, report that in the average normal individual water produces fully as great stimulation as does the familiar Ewald test meal. In explanation of the underlying phenomenon, Pawlow had suggested that the stimulation is due to the prolonged and widespread contact of the water with the gastric mucosa. According to the more recent views of the University of Chicago school of physiologists, to whom, under the leadership of Carlson, so much of our present-day knowledge of the performances of the stomach is due, the older explanation is not tenable. Gastric secretion may occur even when water remains in contact with the mucosa for not more than one and one-half minutes. It seems more likely, therefore, that water washes traces of gastric secretagogues into the intestine, from which they are in turn absorbed so that they can act on the secretory glands by way of the blood; for the existence of a gastrin, or true chemical stimulant to secretion, can no longer be doubted.[2] Furthermore, that the dilution of the blood, as has been suggested, cannot be the controlling factor in promoting gastric secretion by water ingestion, is evident from the added demonstration that stimulation results even when practically no water is absorbed.[3]

The effectiveness of gastrin, preparations of which can be injected at will, in provoking gastric secretion, has made it possible to investigate the debated question of glandular fatigue. In the more careless conversations on clinical topics, one often hears of the importance of resting one or another of the secretory glands. The kidney cells and the cells of the gastric mucosa in particular are popularly supposed to require "rest," despite the undeniable fact that the secretion of urine is quite continuous or uninterrupted, as is the function of the heart or the respiratory center. The essential for their normally continued function is, of course, the orderly balance between destructive and constructive cellular processes, between anabolic and catabolic phases of metabolism, between reception of energy and oxygen and removal of chemical débris. Accordingly, it has been found impossible in the case of the gastric glands likewise to demonstrate a "fatigue" when they are stimulated by water or by gastrin for a period of from sixteen to twenty-six hours—surely a sufficient test. Hence, as to gastric glandular fatigue, says Ivy[3] in speaking of his new experiments at the University of Chicago, it is only reasonable to believe that so long as the normal gastric glands are supplied by the blood with the normal quality and quantity of constituents that form the gastric juice, no fatigue will be observed; but as soon as the blood fails to supply these necessary constituents, a change in the normal character of the gastric juice will occur. Even then, as Ivy adds, it cannot be said that the glands are fatigued; but rather they have only been deprived of the raw products necessary for their normal functioning. It is a somewhat unusual, yet unquestionably helpful point of view to interpret gastric secretory performance from the consideration of the blood supply rather than primarily the cells of the stomach or their innervation.

MEDICAL DEMOBILIZATION

From the present outlook it would appear that in the demobilization of the Army, officers can, if qualified, join the Regular Corps or the Medical Reserve Corps, or they may be honorably discharged. The medical officers of the Army and Navy constitute a splendid body of some 35,000 physicians, well trained and well equipped. It would be a mistake — in fact, almost a crime — to permit these men to be completely detached from the Army and Navy and to be absorbed in civilian life. Hence it is to be hoped that the third group—those requesting honorable discharge —will be comparatively small.

As is well known, the old Medical Reserve Corps was not really an active organization. It consisted of some 1,450 physicians affiliated with the Medical Department of the Army, but practically in name only. The National Defense Act of 1916, in creating the Officers' Reserve Corps, provided that the old Medical Reserve Corps should cease to exist and be replaced by the Medical Section of the newly created Officers' Reserve Corps. The Medical Corps thus created would have been more vital—actually a functionating body, since the act provided for instruction to be given to members of the Reserve Corps for periods of fifteen days each calendar year, and for pay and allowance during the period of instruction. Longer periods than fifteen days could be utilized with the officer's consent. But before the new law went into effect, our country had entered the world war.

Conditions are now radically different from what they were in 1916. We now have a large Medical Corps composed of men who have served in camps of instruction, in cantonments, in the field, in hospitals and on board ships. They do not require training of the character contemplated by the National Defense Act. Undoubtedly, therefore, this act will be modified to meet new conditions. In fact, it is announced that the Secretary of War will shortly present to Congress an outline for such modification. It is hoped that the new legislation will provide a method by which officers who desire to do so can continue an intimate contact with the Army. This is certainly desirable so far as the medical officers are concerned, the great mass of whom made large sacrifices in order to serve their country. They have become interested in army life and methods; they will not be content to be honorably discharged and thereby shelved. Perhaps the feeling is partly sentimental, but largely it is patriotic. Further, the occasion may arise when their services will be useful.

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[1] Bergeim, O.; Rehfuss, M., and Hawk, P. B.: Jour. Biol. Chem., 1914, **19**, 345.

[2] Gastrin, editorial, THE JOURNAL A. M. A., Aug. 21, 1915, p. 722.

[3] Ivy, A. C.: Contributions to the Physiology of the Stomach, XLVIII, Studies in Water Drinking, Am Jour. Physiol., 1918, **46**, 420.

Undoubtedly the Medical Reserve Corps will be continued. But if it is, it might be desirable so to modify its organization as to provide for two classes of members: In one class would be those men within active military age who are now in the service and who have had sufficient military experience to make further training unnecessary. This group, therefore, would not require active training in the camps each year. In the other class would be those who have not had sufficient training and those newly commissioned. This would mean that the Officers' Reserve Corps would be composed of a trained group and a training group. However, the point we desire to emphasize above all others is: In the demobilization an opportunity should be given every medical man now in the service who is trained and physically qualified to retain some connection with the Army.

WAR EMERGENCY AND MEDICAL EDUCATION

At the time the United States entered the world war and until a few months ago, there were grounds for the belief that the war might extend over an indefinite number of years. That, indeed, was the only safe assumption the government could take in its plans for carrying on the war. Following the extension of the selective service regulations to include practically all men of college age, units of the Students' Army Training Corps were established in the approved colleges of arts and sciences. Later the War Department decided to establish such units also in the well recognized medical schools. Medical students were already enrolled in the Medical Enlisted Reserve Corps and were exempted from the draft, but were now ordered to be inducted into active service in the Students' Army Training Corps. The medical schools began at once to carry out the orders and to provide barracks, mess, drill space, etc. The government was to provide the uniforms, board and tuition of students transferred, and, in addition, to give the students the pay of private soldiers. In only about half of the medical schools, however, had the majority of students been transferred when the armistice was signed and further inductions into the Students' Army Training Corps stopped.

The man-power law extending the requirements of the selective service law was not enacted until August. This made it necessary for the Committee on Education and Special Training to work out the necessarily elaborate plans and carry them into effect in an incredibly short space of time. The medical schools had completed their teaching schedules, and many of them had begun their regular sessions before the program for the transfer of their classes to the Students' Army Training Corps was announced. The deans of the medical schools had, in fact, received no previous intimation regarding the radical nature of the changes finally ordered. The time-consuming routine of changing the students from a civilian to a military status — questionnaires, physical examinations, inductions, waiting in line, etc. — took up most of the students' time which otherwise would have been spent in study. The placing of six hours a week of military training into an already overcrowded schedule added to the confusion, which, in many instances, was further increased by a temporary conflict between the military officer who was supreme and educational officers. For example, drill hours were fixed at the time set for laboratory or clinical courses. Orders through military channels were finally sent to the commanding officers in medical schools where conflicts occurred to make the hours for military drill conform with the teaching schedules. Other difficulties, such as the assignment of students to guard duty, to raking leaves, to kitchen police duties and the like, were also settled by similar orders. Again, the giving up of quiet rooms at their homes or in other private dwellings and the living in barracks, where no provision had been made for study, took away from the students their opportunity for effective work. To cap the climax came the epidemic of influenza, which required the closing of many of the schools. As a consequence, during the time that has elapsed since the opening of the college session, little or no effective teaching has been done in many of the medical schools in which active military training had been established. The difficulty was not due so much to the military training as to the requirement that the students live in barracks and the failure to have the drill hours fit in with the class schedule.

The termination of the war takes away the necessity for further interfering with medical schools, and it is highly important that these institutions be restored to their prewar status at the earliest possible moment. The orders issued thus far by the War Department indicate a rapid demobilization, and it is probable that in both premedical and medical courses the Students' Army Training Corps will soon be discontinued. The medical colleges, therefore, should arrange to extend their sessions for a month or six weeks into next summer so as to make up most if not all of the time that has been lost. If this is not done, the students' ability to secure licenses after they have completed the medical course will be jeopardized. State boards generally have expressed their willingness to make liberal allowances to meet such educational measures as might be necessary in the national emergency. Now that the emergency has disappeared, however, and there is still opportunity to make up the time lost, state boards should not be expected to relax the educational standards provided for in the practice acts. Efficient teaching in the medical schools should be at once restored.

Current Comment

FIRST AID TO OUR NAVAL FORCES

The Journal has received two copies of *The "T. B." (True Blue) Bulletin*, the "Official Publication of the United States Naval Hospital, Fort Lyon, Colo., Issued Every Saturday under the Direction of George H. Barber, Medical Director, U. S. N." It is a bright and cheery little eight-page paper, devoted to the local happenings at the Naval Hospital. Particularly interesting are some of the advertisements found in this paper. The first to attract attention is a picture of a blooming damsel with hair hanging down below her waist; our sailors are told: "Girls, try this. It doubles the beauty of your hair in a few moments." "This" was "Danderine." On the next page is a picture of an anxious mother looking at her little girl's tongue: "Look at the tongue, mother! If coated, it is a sure sign that your little one's stomach, liver and bowels need a gentle, thorough cleansing at once"—and "California Syrup of Figs" will do the trick. Those of our naval forces that feel the need of something in that line may infer that they can "Get New Kidneys" by taking "Gold Medal Haarlem Oil." A kindly faced woman, holding aloft a bottle of Lydia Pinkham's Vegetable Compound, tells the boys in blue that this wonderful preparation "restored my health after everything else had failed, when passing through change of life. There is nothing like it to overcome the trying symptoms." To the sailor who has worms, "Spohn's Compound" is recommended. Those who are suffering from "Acid-Stomach," or from "Indigestion, Gas, Up-set Stomach" can take their choice of "Eatonic" and "Pape's Diapepsin." Furthermore, the sailors are told that "Every woman wants Paxtine Antiseptic Powder for Personal Hygiene." It is "Recommended by Lydia E. Pinkham's Medicine Co." The interesting information is vouchsafed that "Women Sufferers May Need Swamp Root," and "If a woman is nervous or has dizzy spells, suffers from awful pains at regular or irregular intervals, she should turn to"—"Dr. Pierce's Favorite Prescription." Those in the Naval Hospital who fear the present epidemic are assured that "Spanish Influenza can be prevented easier than it can be cured. At the first sign of a shiver or sneeze take Hill's Cascara Bromid Quinin." Those who may be suffering from "Granulated Eyelids," Eczema, or "Baby Colds" should use "Murine," "Hunt's Salve," or "Piso's," as the case may be. A large advertisement, addressed presumably to the hospital authorities, gives instructions "How to Use Vick's Vaporub in Treating Spanish Influenza." Colorado, we believe, is dry, and in any case men in the service are subject to certain restrictions, but "For coughs, colds, effects of the grip and influenza"—"Try Peruna first." Altogether, one feels that in the United States Naval Hospital at Fort Lyon, there is no excuse for sickness.

POSSIBLE DANGERS IN EUCALYPTUS OIL AND RELATED PRODUCTS

The idiosyncrasy of an occasional person to therapeutic doses of familiar drugs is an admitted possibility but not always a recognized occurrence. Various types of hypersensitiveness are encountered sufficiently often to be impressed on the minds of the clinician as experiences that need to be reckoned with. Iodid rash may be cited in illustration. The less well appreciated instances, however, deserve special notice, particularly when they are attributable to commonly used remedial agents. Barker and Rowntree[1] have called attention to evidences of intoxication obtained with myrtol, a little known drug administered in the treatment of catarrhal conditions of the respiratory mucous membrane. This terpene-containing substance is obtained by distillation of the leaves of *Myrtus communis,* as eucalyptol, the chief constituent of eucalyptus oil, is prepared from another genus *Eucalyptus* of the same natural order of plants. A review of recorded cases of intoxication, unexpected and unaccountable or otherwise, with derivatives of these myrtaceous plants reveals the occurrence of two somewhat distinct syndromes. In the one, designated myrtogenic neuropathy by Barker and Rowntree, the nervous system primarily is affected; in the other form of intoxication, the myrtogenic dermatopathy, the skin chiefly is affected, with lesions that may be erythematous or urticarial in character. The fact that eucalyptus oil has come into more extended use again in connection with chloramin therapy, and that oils from some of the myrtaceous species appear to be used in proprietary products, such as cough drops, makes a reference to the possible dangers from them timely.

A SHORT SIGHTED DRUGGIST

Those druggists who believe that pharmacy is a profession rather than a trade have for some time urged physicians to prescribe official products rather than proprietary preparations, at least, in all cases where proprietary and official products are essentially similar. A recent experience reported to The Journal from New Haven, Conn., is worth recording. Our correspondent, who, while not a physician, is especially interested in The Journal's propaganda, writes:

> I went to a nearby drug store and asked for twenty-five cents' worth of Liquor Antisepticus Alkalinus; I got one ounce! The druggist charged me fifteen cents an ounce, and ten cents for the container. Next time I fear I shall be forced to get Glycothymoline!

To penalize a man who calls for an official product, so as to drive him to ask for a "patent medicine" of the same general character, is both poor pharmacy and bad business.

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[1] Barker, L. F., and Rowntree, L. G.: Myrtol Poisoning; with Comments upon the Toxicity of Eucalyptus Oil and Myrtol in Human Beings and in Animals, Bull. Johns Hopkins Hosp., 1918, **29**, 215.

Medical Mobilization and the War

Commissioning of Physicians and All Promotions Stopped

The Surgeon-General's Office advises that since 10 o'clock of the morning of November 11, the War Department discontinued the commissioning of officers in the various corps of the Army, including physicians in the Medical Corps. This condition, it is stated, is in all probability permanent and favorable consideration will not be given to applications for commissions in the Medical Corps until further notice. At the same time favorable consideration on the recommendations for the promotion of officers was discontinued and no further promotions will be made until this embargo is modified.

Demobilization of the Army

In a press interview given by the Secretary of War, Nov. 15, 1918, it was stated that the first units to be demobilized will be the Development Battalions at the camps. These battalions are made up of men who are under physical requirements, or undergoing special drill or discipline to bring them into military value.

Every man who is discharged from the Army must have a complete physical examination for permanent record. This is the great task which now devolves on the Medical Department.

In an interview by Gen. Peyton March, November 16, it was stated that some 200,000 men will be mustered out within two weeks and then when the machine is in operation, some 30,000 men will be released daily. General March stated that under the present laws, every man who is discharged is entitled to wear his uniform for a period of three months.

Officers will be listed into various groups: those who wish to apply for commissions in the Regular Army; those who wish to put themselves into a class where they can be used for future military operations will be offered commissions in the Reserve Corps; all others will be given honorable discharges. General March stated that he had issued an order to all the staff corps stating that the discharge of officers and men must keep pace with cutting down of the work, and each department has been directed to submit a list of officers and men from time to time as they can be spared for discharge.

Medical Veterans of the World's War

There has been incorporated in the District of Columbia an organization to be known as the Medical Veterans of the World's War, and on Nov. 15, 1918, the following was recorded:

CERTIFICATE OF INCORPORATION

KNOW ALL MEN BY THESE PRESENTS, THAT WE, the undersigned, all of whom are citizens of the United States, and a majority of whom are residents of the District of Columbia, desiring to associate ourselves together to form an association under the provisions of the Code of Law for the District of Columbia, enacted by Congress and approved by the President of the United States, hereby certify that,

First: The name of the association shall be Medical Veterans of the World War.

Second: The term for which it is organized shall be perpetual.

Third: The particular business, objects and purpose of the association are: To perpetuate fellowship, prepare history, secure cooperation for the mutual benefit of the medical men who served in the War of Nations, 1914-1918, and for the mutual improvement and social intercouse of its members.

Fourth: The number of trustees who shall manage the affairs of the association for the first year of its existence, and until otherwise provided, shall be seven, who shall be the incorporators named below; and nothing herein contained shall prevent the association in increasing the number of trustees for any subsequent year of its existence.

IN WITNESS WHEREOF we, Frederick F. Russell, Edward R. Stitt, James C. Perry, James S. Easby-Smith, Victor C. Vaughan, William J. Mayo and Hubert Work, have hereunto subscribed our names and affixed our seals this fifteenth of November, A. D., 1918.

FREDERICK F. RUSSELL
EDWARD R. STITT
JAMES C. PERRY
JAMES S. EASBY-SMITH
VICTOR C. VAUGHAN
WILLIAM J. MAYO
HUBERT WORK

District of Columbia, ss:

I, N. Curtis Lammond, a Notary Public in and for the district aforesaid, do hereby certify that Frederick F. Russell, Edward R. Stitt, James C. Perry, James S. Easby-Smith, Victor C. Vaughan, William J. Mayo and Hubert Work, parties to a certain certificate of incorporation bearing date on the 15th day of November A. D., 1918, and hereto annexed, personally appeared before me, in the district aforesaid, the said Frederick F. Russell, Edward R. Stitt, James C. Perry, James S. Easby-Smith, Victor C. Vaughan, William J. Mayo and Hubert Work, being personally well known to me to be the persons who executed the said certificate, and acknowledged the same to be their act and deed for the purposes therein named.

Given under my hand and notary seal this 15th day of November, A. D., 1918.

N. CURTIS LAMMOND, Notary Public.

The several federal departments and civilian organizations cooperating in the formation of this new association are as follows:

INCORPORATORS	REPRESENTING
Colonel Frederick F. Russell	The Surgeon-General of the Army
Rear Admiral Edward R. Stitt	The Surgeon-General of the Navy
Asst. Surg.-Gen. James C. Perry	The Surg.-Gen. of Pub. H. Service
Colonel James S. Easby-Smith	The Provost Marshal General
Colonel Victor C. Vaughan	The Assn. of Mil. Surgeons
Colonel William J. Mayo	The Am. College of Surgeons
Lieut.-Col. Hubert Work	The American Medical Association

It is proposed that the membership of the Medical Veterans of the World's War shall include (a) all medical *officers who have served in the Medical Corps of the U. S.* Army, the U. S. Navy, and the U. S. Public Health Service; (b) all physicians who have been officially appointed by the President, Provost Marshal-General, or the governors of states, and who have served as members of or medical examiners on Local, Medical Advisory and District Boards.

A temporary organization has been effected, and a committee appointed to draft a constitution and by-laws.

HUBERT WORK, President.
FREDERICK F. RUSSELL, Secretary.
Officers of the temporary organization.

Red Cross Mission to Siberia

We are informed by Dr. Rudis-Jicinsky that the American National Red Cross is sending a mission to Russia, Serbia and other Slavic lands. This mission, consisting of the following personnel, will sail about the first of December for Siberia:

Surgeons: Dr. J. Cepelka, 1900 Blue Island Ave., Chicago; Dr. Henry Otradovec, 455 W. 63d St., Chicago; Dr. Fred A. Sedlacek, 1270 S. 13th St., Omaha; Dr. Emil E. Tanner, 628 Chestnut St., Milwaukee.

Internists: Dr. Charles Neumann, 1328 W. 18th St., Chicago; Dr. V. Anyz, Blue Island Ave., Chicago.

Tuberculosis Specialists: Dr. A. J. Moravek, Rio, N. Y.; Dr. Karel B. Blahnik, 1901 W. 47th St., Chicago.

Roentgenologist: Dr. J. Rudis-Jicinsky, 1900 Blue Island Ave., Chicago.

Oculist: Dr. Georgia Dvorak Theobald, South Ashland Ave. and 18th St., Chicago.

Dentists: Dr. B. K. Simonek, 1669 Blue Island Ave., Chicago; Dr. Rudolph Klicka, 616 Chestnut St., Pittsburgh; Dr. Charles Stepanek, 3634 W. 26th St., Chicago; Dr. F. R. Vasko, 1270 S. 13th St., Omaha; Dr. J. A. Shambora, 907 G St., Washington, D. C.; Dr. A. Zadrazil, Second Ave. E., 107, Cedar Rapids, Iowa; Dr. Frank V. Nemecek, 342 E. 72d St., New York.

Laboratory technician and metabolist: J. Novak, 1867 Blue Island Ave., Chicago.

Pharmacist: O. J. Pelikan, 2601 S. Lawndale Ave., Chicago.

Influenza at the Camp Brooks Open Air Hospital

The State of Massachusetts has prepared for distribution in pamphlet form the report of Major Thomas F. Harrington, medical officer in charge, on the open air camp at Corey Hill, Brookline, for the treatment of influenza among the boys in training on the receiving ships *Meade, Cobb, Dingley* and *Austin* of the merchant marine service of the state. The work at this camp has attracted attention on account of the adoption of the open air and sunshine method of caring for the patients and the employment of wire masks covered with gauze for every one coming in contact with the patients, for both of which features priority is claimed for this camp. A low incidence of pneumonia and other complications and a low death rate were among the results of this method of handling patients adopted in the hospital, as shown by the report.

The establishment of the hospital equipped to receive patients September 9, within seven hours after the work was started, and the actual receipt of thirty-eight patients at the end of that period is pointed to as an example of rapid and efficient work by the military authorities of the state and of the foresight of Governor McCall in providing equipment and supplies for such an emergency. The hospital, which was built of tents, except for portable buildings set up later for the staff and the nurses, was erected by companies of the state guard.

The medical staff consisted of the chief medical officer, commanding officer of the camp, eight physicians on night service and ten on day service, with two bacteriologists, chief nurse, head nurse for each ward, with one trained nurse, two nurse's aides and two orderlies for each. The wards consisted of thirteen tents, twelve to be occupied by one or two patients each, the thirteenth for the head ward nurse and for certain equipment to aid in carrying out prophylactic measures. All tents and the whole camp was properly drained, proper latrines and sewerage provided, water in sufficient supply, cooking facilities and an abundance of food and many luxuries arranged for from the start.

During the existence of the hospital, September 9 to October 12, there were 351 patients treated, representing the seriously ill among 1,200 men affected with influenza out of a group of more than 5,100 sailors, the deaths amounting to but thirty-six among the 351 patients.

The preventive measures may be summarized as follows: All persons coming in contact with patients to wear five layers of gauze on a wire mask over nose and mouth while near patients, gauze not to come in contact with nostrils or mouth and to be changed every two hours; hands of physicians, nurses and orderlies to be washed in bichlorid solution 1:1,000 after each contact with patients; separation of dishes and utensils used by patients and thorough boiling of same after each use; paper plates, drinking cups and napkins for pneumonia and meningitis patients; gloves and gowns, including head covering, for every one coming in contact with patients; prohibition of use of all common drinking cups, towels, etc.; thorough washing of hands of nurse before eating; gargle and mouth wash of Dobell's solution, etc.; application of argyrol ointment (10 per cent.) to nasal mucous membrane twice daily as a preventive against ear infection; use of paper bags with gauze, in place of sputum cups, to be pinned to pillow cases.

General measures were, outdoor treatment, with a maximum of sunshine and of fresh air day and night, with provision for warming the patient during the night by hot bricks, hot water bottles, extra blankets or paper sheets; four-hour feeding throughout the entire course of the fever; free catharsis by calomel, compound cathartic pill, sodium phosphate, magnesium sulphate, etc.

In the way of special medication were sponging for fever, coal tar preparations, acetylsalicylic acid, quinin, salicylates; for cough, brown mixture, Dover's powder, codein and expectorant mixture; for throat, mentholated throat tablets, Dobell's spray, red gum lozenges; for kidney irritation, hexamethylenamin, spirit of nitrous ether, milk; for nosebleed, plugging with cotton saturated with epinephrin solution; for heart, digipuratum, digifolin, camphor in oil, strychnin: for pneumonia, cotton or paper jackets, forced feeding, calcium iodid, codein, morphin, atropin, bromids, expectorant mixture and oxygen inhalation; for delirium, bromids, codein, ipecac; for meningitis, Flexner's serum; for arthritis, sodium salicylate; for convalescence, tonics of iron, arsenic and strychnin.

The preventive and medication measures as employed in the camp emphasize that the rigid enforcement of prevention guarantees protection to those brought in intimate contact with infected persons, and that drug treatment is secondary in value to forced feeding, warmth and an abundance of fresh air and sunshine.

On the subject of mask protection it is said that among a personnel of 15 physicians, 45 nurses and aids, 20 sanitary corps men and 74 sailors acting as orderlies, many of whom, especially among the latter, were changed frequently, only six nurses and two orderlies developed influenza, and it was possible to trace exposure outside the camp in five of these cases.

The term influenza-pneumonia is suggested for the type of pneumonia associated with the epidemic. It is distinctly a septicemia, and few cases occurred in which there was a positive, frank pneumonia of a specific type. There were 122 cases diagnosed either clinically or bacteriologically as pneumonia, divided roughly into 56 lobar and 66 bronchial. The mortality was 29 out of 36 deaths; a percentage of 10.16 pneumonics among 1,200 cases of influenza, and a mortality of 8.26 per cent. from pneumonia among the 351 patients treated. The percentage of pneumonia among the patients received at the hospital was 34.7.

COMMISSIONS OFFERED AND ORDERS TO DUTY ON ACCEPTANCE

[Note.—As stated elsewhere the issuing of all commissions was stopped, November 11, at 10 a. m. Therefore many of the commissions here indicated as offered may not have been received.—Ed.]

Alabama

To Camp Beauregard, La., Lieut. E. H. COUCH, Union Grove.

To Camp McClellan, Ala., Lieut. R. C. PARTLOW, Tuscaloosa.

To Camp Meade, Md., for special instruction, Lieut. G. L. WOOD, Haleburg.

To Fort Oglethorpe for instruction, Lieuts. L. A. KILPATRICK, Altoona; C. W. JONES, Boothton; G. C. REYNOLDS, Brundidge; C. N. LACEY, Demopolis; H. S. MUSTARD, Florence; R. L. HILL, Lynn; E. W. GRAY, Sheffield.

To report to the commanding general, Southeastern Department, Lieut. M. T. C. SCOTT, Headland.

Alaska

To Camp Dix, N. J., base hospital, for instruction, Capt. C. W. WELCH, Candle.

To Fort Riley for instruction, Lieut. A. LOVAS, Anchorage.

Arizona

To Camp Cody, N. M., Lieut. S. B. NORRIS, Tucson. *To examine the command* for nervous and mental diseases, Capt. P. B. NEWCOMB, Phoenix.

To Fort Riley for instruction, Lieuts. K. M. GILBERT, Chandler; H. C. MOORE, Silverbell.

To report to the commanding general, Central Department, Capt. L. E. SCHOCH, Phoenix.

Arkansas

To Camp Joseph E. Johnston, Fla., Lieut. W. P. MOORE, Little Rock.

To Camp Pike, Ark., Lieut. E. A. PURDUM, Hot Springs.

To Fort Oglethorpe for instruction, Capt. W. L. KITCHENS, Stamps, Lieut. W. E. JONES, Paris.

To Fort Riley, Lieut. J. E. JOHNSON, Fort Smith. For instruction, Lieuts. M. S. CRAIG, Batesville; R. N. MANLEY, Clarksville; E. D. ERWIN, Monticello; H. A. MURPHY, Wesson.

California

To Arcadia, Calif., Lieut. E. G. MATTISON, Pasadena.

To Camp Dodge, Iowa, base hospital, for instruction, Major C. E. PHILLIPS, Los Angeles.

To Camp Fremont, Calif., Capt. A. C. MATHEWS, Napa. Base hospital, Capt. G. W. BROWN, Los Angeles. Base hospital, for instruction, Capt. F. CUTTLE, Hanford; Lieut. J. J. O'BRIEN, Los Angeles.

To Camp Kearney, Calif., Capts. R. W. BUCKNAM, E. E. SHERRARD, Los Angeles; J. D. BALL, Oakland; M. W. HAWORTH, Sacramento; Lieuts. E. M. GRIMMER, Irvington; C. W. SHIREY, Lankershim; S. J. BECKA, J. F. HOLLERAN, O. I. TOWER, Los Angeles; R. E. MAXWELL, Randsburg; J. W. BROWNLIE, Vallejo. Base hospital, Lieut. E. E. PATERSON, Oakland. Base hospital, for instruction, Capt. C. T. ROSSON, Hanford; P. H. PYLES, Los Angeles; W. S. PORTER, Oakland; S. J. ONESTI, H. O. von der LIETH, San Francisco; D. A. BEATTIE, San Jose.

To Camp Lewis, Wash., Lieut. C. F. PAWLICKI, San Francisco.

To Camp Pike, Ark., Capt. H. PARTRIDGE, San Francisco.

To Denver, Colo., Lieut. H. C. BUSH, Colfax.

To Fort Oglethorpe for instruction, Capts. G. F. DOYLE, Bishop; A. SOILAND, Los Angeles; Lieuts. I. W. HIGGINS, Live Oak; H. B. MISCH, J. G. WARE, Los Angeles; H. A. ULVIN, San Francisco.

To Fort Riley for instruction, Lieuts. H. C. MAY, H. W. SPIERS, Los Angeles.

To New Haven, Conn., Yale Army Laboratory School, for instruction, Lieuts. W. T. HARRISON, H. J. WRIGHT, San Francisco.

To report to the commanding general, Western Department, Capt. H. S. KERGAN, Oakland; Lieuts. H. DECKER, Beckwith; E. H. COLEMAN, Los Altos; D. A. THIEMS, Los Angeles; A. C. SMITH, G. E. P. WALTON, Oakland; P. G. YOUNG, Sacramento; F. E. FRATES, H. RIGHETTI, C. E. TAYLOR, San Francisco; H. LEVIN, San Pedro; C. B. LAUGHLIN, Sausalito.

To San Diego, Calif., Rockwell Field, Lieut. C. R. BLAKE, Richmond.

To San Francisco, Calif., Capt. W. C. FINCH, Los Angeles. Letterman General Hospital, Capts. F. M. MIKLES, Long Beach; A. M. LESEM, San Diego; H. C. McCLENAHAN, R. F. TOMLINSON, San Francisco; L. H. FULLER, Van Nuys.

Colorado

To Army Medical School, Lieut. R. M. BOWEN, Denver.

To Camp Bowie, Texas, base hospital, for instruction, Capt. W. T. H. BAKER, Pueblo.

To Denver, Colo., Lieut. M. I. MARSHAK, Edgewater.

To Fort Logan, Colo., Lieut. M. J. KROHN, Denver.

To Fort Oglethorpe for instruction, Capts. A. J. HETHERINGTON, Boulder; O. S. FOWLER, Lieut. H. N. KROHN, Denver.

To Fort Riley, Lieut. D. O. GROVES, Calhan. For instruction, Capts. J. O. HARDY, Las Animas; J. G. McFADDEN, Loveland; Lieuts. P. M. LENNOX, Colorado Springs; F. P. N. VAN LANDEGHEM, Fleming.

To Fort Sill, Okla., Capt. A. S. TAUSSIG, Denver.

Connecticut

To Camp Dix, N. J., base hospital, for instruction, Capt. F. G. BECK, New Haven.

To Camp Meade, Md., Lieut. J. F. SHEA, Bridgeport.

To Camp Wadsworth, S. C., Lieut. H. S. SCHUL[illegible]

To Fort Oglethorpe for instruction, Capts. J. D. [illegible] W. H. VAN STRANDER, Hartford; W. P. LANG, [illegible] R. L. DRESEL, D. W. TRACY, Hartford; F. F. BUDD, New Haven.

To Mineola, N. Y., Hazelhurst Field, for instruction, Lieut. T. H. GALLIVAN, Hartford.

Delaware

To Fort Oglethorpe for instruction, Lieut. G. L. DOUGHERTY, Wilmington.

District of Columbia

To Army Medical School, Lieut. N. P. NELSON, Washington.

To Camp Gordon, Ga., base hospital, Lieut. L. E. PAYNE, Washington.

To Fort Oglethorpe for instruction, Lieuts. W. E. FRANK, C. A. SIMPSON, Washington.

To Mineola, N. Y., Hazelhurst Field, for instruction, Lieut. E. J. KEMPF, Washington.

To Newport News, Va., Major W. C. RUCKER, Washington.

Florida

To Camp Joseph E. Johnston, Fla., base hospital, Capt. C. BRADY, Leesburg; Lieut. G. A. LASSMAN, Tampa.

To Camp Shelby, Miss., Lieut. G. H. BENTON, Miami.

To Fort Oglethorpe for instruction, Capt. C. L. HYATT, Kissimmee; Lieuts. C. J. BAUMGARTNER, Jacksonville; G. H. BRANTLEY, W. L. NUTTER, Lake Worth.

To report to the governor of Florida as medical aide, Capt. H. E. PALMER, Tallahassee.

Georgia

To Camp Jackson, S. C., Lieuts. B. M. CLINE, Milledgeville; A. H. DELLINGER, Silver Creek. Base hospital, Capt. W. C. PUMPELLY, Macon.

To Fort Oglethorpe for instruction, Lieuts. R. L. BLACKMON, G. W. FULLER, R. J. SPEIR, Atlanta; C. A. STEVENSON, Camilla; R. J. POWER, Roswell; J. M. SMITH, Sharps Spur.

Hawaii

To Hawaiian Department, Capt. W. OSMERS, Wailuku.

Idaho

To Camp Wadsworth, S. C., base hospital, Lieut. W. E. HUNTER, Pocatello.

To Fort Oglethorpe for instruction, Lieut. O. E. BLOOM, Hill City.

To Fort Riley, Capt. M. McKINNIN, Sandpoint. For instruction, Capt. V. R. KILLEN, Rupert; Lieuts. F. C. GIBSON, Bovill; F. E. BOUCHER, St. Anthony.

To report to the commanding general, Western Department, Lieut. C. D. WEAVER, Twin Falls.

Illinois

To Army Medical School, Lieut. W. H. CUNNINGHAM, Rockford.

To Camp Custer, Mich., base hospital, Capts. J. J. KILLEEN, Chicago; D. M. KEITH, Rockford. Base hospital, for instruction, Capts. J. L. BAER, Chicago; K. F. SNYDER, Freeport; C. W. POORMAN, Oak Park.

To Camp Gordon, Ga., base hospital, for instruction, Lieut. T. M. EGAN, F. A. ZIBELMAN, Chicago.

To Camp Grant, Ill., base hospital, Major G. E. SHAMBAUGH, Chicago.

To Camp Jackson, S. C., base hospital, Major A. R. EDWARDS, Capt. N. SCHOOLMAN, Chicago.

To Camp Joseph E. Johnston, Fla., Lieut. M. McKELLAR, Chicago.

To Camp McClellan, Ala., Capt. F. J. SULLIVAN, Kankakee.

To Camp Pike, Ark., Lieut. D. D. CAMPBELL, Chicago.

To Camp Shelby, Miss., Lieut. W. A. McROBERTS, Joliet.

To Camp Sherman, Ohio, base hospital, for instruction, Capt. J. J. MONAHAN, Chicago.

To Camp Zachary Taylor, Ky., base hospital, Capts. J. S. NAGEL, Chicago; L. E. SCHWARZ, Highland Park.

To Fort Oglethorpe for instruction, Capts. I. FRANK, M. JAMPOLIS, C. M. McKENNA, Chicago; Z. V. KIMBALL, Hillsboro; F. A. RYDEN, Plainfield; Lieuts. R. R. McLALLEN, Aurora; F. G. BUWATCHECK, Belleville; J. H. PITTMAN, Camp Point; M. H. WHITLOCK, Canton; J. H. APPLEMAN, R. A. ARENS, H. E. BRYANT, W. A. GROSS, D. H. HOWELL, M. I. KAPLAN, M. J. KELLY, Z. J. LITTLE, W. W. McCABE, A. L. MORRIS, J. M. MURPHY, E. K. NILES, M. V. H. PUCKEY, J. M. SHAW, A. E. SMITH, A H. WADDINGTON, H. E. WALSH, B. WILKINSON, Chicago; E. H. LANE, East St. Louis; P. M. MILLER, German Valley; K. D. SANDERS, Jonesboro; J. W. KALES, Jr., Kirkland; G. J. DIESEL, Millstadt; R. H. STEWART, Victoria; J. W. WELLS, Waltonville; P. A. ISHERWOOD, West Chicago; N. L. SEELYE, Woodstock.

To Fort Riley, Lieut. A. V. CAPEL, Shawneetown. For instruction, Capts. A. G. BOSLER, C. F. SAWYER, Chicago; A. W. BRADFORD, Lacon; Lieuts. G. G. O'CONNELL, V. L. SHEETS, Chicago; H. F. KILLENE, W. C. SPANNAGEL, East St. Louis; R. OLDFIELD, Oak Park.

To Fort Sheridan, Ill., Lieut. E. T. MURPHY, Chicago. For instruction,

To Lakewood, N. J., Lieut. C. M. BACON, Chicago. Lieut. Y. N. LEVINSON, Chicago.

To New York City, Neurological Institute, for intensive training, Lieut. A. W. LA FORGE, Chicago.

To report to the commanding general, Central Department, Capts. W. N. SENN, O. M. STEFFENSON, M. A. WEISSKOPF, Chicago; W. C. ISOM, Renault; Lieuts. H. O. WILLIAMS, Centralia; J. L. O. TRUDEL, Chicago.

Indiana

To Army Medical School, Lieut. E. C. GARBER, Dunkirk.

To Camp Custer, Mich., Lieut. G. C. PRITCHETT, Muncie. Base hospital, for instruction, Capts. O. SMILEY, Indianapolis; F. H. JETT, Terre Haute.

To Camp Gordon, Ga., base hospital, for instruction, Lieut. D. T. MILLER, Terre Haute.

To Camp Grant, Ill., Lieut. J. W. CLUBB, Blanford.

To Camp Pike, Ark., Capt. J. R. CROWDER, Sullivan.

To Camp Shelby, Miss., base hospital, for instruction, Lieut. A. A. RANG, Washington.

To Camp Sherman, Ohio, base hospital, Capt. J. D. MILLER, Indianapolis. *To examine the command* for nervous and mental diseases, Capt. O. EVERMAN, Indianapolis.

To Camp Zachary Taylor, Ky., Lieut. H. L. BASS, Elberfield.

To Fort Benjamin Harrison, Lieut. J. H. WRORK, Shelburn.

To Fort Oglethorpe for instruction, Capts. M. T. McCARTY, Frankfort; J. M. BOYER, Indianapolis; J. H. COOK, K. F. WILLIEN, Terre Haute; Lieuts. W. A. SAMUELL, Butler; H. E. GLOCK, Fort Wayne; F. W. DUNN, Gaston; D. W. WEAVER, Greensburg; E. W. BURRIS, Indianapolis; W. C. MATHEWS, Kentland; C. H. PERRY, Lewis Creek; W. C. SHERWOOD, Mitchell; G. G. WIMMER, Mount Etna; J. A. TURNER, Nashville; W. A. JOHNSON, Perrysville; W. F. PAYNE, Prairie Creek; A. P. RAINIER, Remington; H. O. SEIPEL, Valpariaso; C. E. STEWART, Vincennes.

To Fort Riley for instruction, Lieut. C. S. BAKER, Evansville.

To New Haven, Conn., Capt. H. F. MITCHELL, South Bend.

Iowa

To Ann Arbor, Mich., State Psychopathic Hospital, for intensive training, Lieut. J. T. SLATTERY, Dunlap.

To Camp Dodge, Iowa, Lieut. J. W. LAIRD, Mount Pleasant. Base hospital, for instruction, Lieut. A. M. LOES, Dubuque.

To Camp Pike, Ark., Lieut. M. E. KEMP, Sigourney.

To Camp Travis, Texas, base hospital, for instruction, Capt. R. M. WATERS, Sioux City.

To Fort Oglethorpe, Lieut. J. MAXWELL, Gibson. For instruction, Capts. F. S. HOUGH, Sibley; G. S. BROWNING, Sioux City; Lieuts. S. W. HUSTON, Crawfordsville; A. O. WIRSIG, Iowa City; C. D. MERCER, West Union.

To Fort Riley, Capt. F. E. V. SHORE, Des Moines. For instruction, Capts. W. A. STOECKS, Davenport; L. P. RICH, Fredericksburg; S. B. DEPREE, Sioux City; C. W. McLAUGHLIN, Washington; Lieuts. F. P. CAULEY, Anthea; J. H. VAN DYKE, Cedar Falls; H. J. PATCHIN, Denmark; H. D. WEST, Des Moines; R. L. FEIGHTNER, Fort Madison; A. W. LUNDVICK, Gowrie; R. W. STOBER, Greene; F. R. CUTLER, Guttenberg; P. I. DAHL, Inwood.

Kansas

To Camp Custer, Mich., base hospital, for instruction, Capt. J. E. FOLTZ, Hutchinson.

To Fort Riley, base hospital, for instruction, Lieut. E. A. DAVIS, Chanute. For instruction, Capts. H. P. MERA, Jr., Abilene; G. C. McCORMICK, Coffeyville; R. L. FERGUSON, Marquette; C. E. SHAFFER, Moline; Lieuts. L. O. FORNEY, Byers; W. Z. ASHBY, Delphos; W. A. SMILEY, Junction City; D. R. STERETT, Leavenworth; G. J. GOODSHEELER, Marion; H. M. MAYER, Peabody; L. A. SUTTER, Wichita.

Kentucky

To Camp Sherman, Ala., base hospital, Capt. C. W. DOWDEN, Louisville.

To Camp Zachary Taylor, Ky., Lieut. J. F. DUNN, Arlington.

To Fort Oglethorpe for instruction, Capts. L. T. MINISH, Frankfort; W. W. W. WILSON, Henderson; R. W. LONG, Madisonville; J. H. HENDREN, Pineville; B. C. BACH, Whitesburg; Lieuts. S. W. CROWE, Centertown; W. S. STUCKY, Lexington; C. S. GOODMAN, E. L. IRWIN, Louisville; P. A. HART, Murray; J. B. ACREE, Paducah; J. F. SMITH, Redbush.

To Fort Riley for instruction, Lieut. J. H. HOWE, Rocky Hill Station.

To Frankfort, Ky., Major T. R. WELCH, Nicholasville.

To New Haven, Conn., Capt. L. RYANS, Louisville; Lieut. E. L. STRADER, Waverley Hills.

To report to the commanding general, Central Department, Capt. W. A. BOLLING, Louisville.

Louisiana

To Camp Beauregard, La., Lieut. A. A. PRAY, New Orleans.

To Camp Shelby, Miss., base hospital, for instruction, Lieut. L. LEVY, New Orleans.

To Fort Oglethorpe for instruction, Capt. E. S. HATCH, New Orleans; Lieuts. L. M. BEUDREAUX, Abbeville; E. M. WILLIAMS Franklin; E. C. SIMONTON, Jonesboro; C. P. GRAY, Monroe; M. H. PHELPS, Natchitoches; D. HYMAN, A. M. POWE, New Orleans.

Maine

To Camp Upton, N. Y., Lieut. J. F. COX, Bangor. Base hospital, for instruction, Capt. W. H. HAWKINS, Lewiston.

To Fort Oglethorpe for instruction, Lieut. B. B. FOSTER, Portland.

To Plattsburg Barracks, N. Y., Capt. P. H. S. VAUGHAN, Yarmouthville.

Maryland

To Camp Sherman, Ohio, Capt. H. M. FITZHUGH, Westminster.

To Fort Oglethorpe for instruction, Lieuts. M. A. VARZHABEDIAN, B. J. WESS, Baltimore; G. E. LANCASTER, Bowie.

To report to the comanding general, Eastern Department, Lieut. J. C. STANSBURY, Baltimore.

Massachusetts

To Army Medical School, Lieuts. G. W. HEASLIP, Lynn; J. F. COLLINS, Marlboro; A. J. PETER, Newburyport; F. P. BOYD, Springfield.

To Camp Devens, Mass., base hospital, Lieut. B. HOLBROOK, Waltham. Base hospital, for instruction, Lieuts. W. J. TAYLOR, East Dedham; J. H. KERRIGAN, Stoneham.

To Camp Gordon, Ga., base hospital, Capt. W. H. REGAN, Cambridge.

To Camp Jackson, S. C., base hospital, Major H. A. CHRISTIAN, Boston.

To Camp Meade, Md., for special instruction, Lieut. H. L. SHAPLEIGH, Boston.

To Camp Shelby, Miss., base hospital, Capt. C. B. FAUNCE, Boston.

To Camp Upton, N. Y., Lieut. E. G. BAUM Natick. Base hospital, for instruction, Capts. C. P. SYLVESTER, O. G. TINKHAM, Boston; Lieut. C. L. CURTIS, Salem.

To Camp Wadsworth, S. C., Capt. F. M. STILES, Waltham.

To East Norfolk, Mass., Major I. H. NEFF, East Norfolk.

To Fort Leavenworth, Kan., Capt. G. G. FORNALD, Concord Junction.

To Fort Oglethorpe for instruction, Capts. J. D. CLARK, T. J. SCANLAN, Boston; G. H. FOSS, Springfield; Lieuts. J. H. BLAISDELL, J. F. MAGUIRE, G. E. PERKINS, R. A. SADLER, H. E. SETTLE, H. L. WALLACE, Boston; F. L. JONES, Chatham; H. L. BOLEN, Fall River; M. A. STRANMER, Jamaica Plain; J. D. CHRISTIE, Littleton; E. S. O'KEEFE, Lynn; L. W. SALVIN, Roxbury; C. ARONSON, Salem; F. SHAW, Somerville; J. F. GAYLORD, W. E. MULCAHY, Springfield; G. C. PROCTOR, Wellesley Hills; J. E. PELLETIER, Worcester.

To New Haven, Conn., Lieut. W. B. HOWES, Framingham.

To Plattsburg, N. Y., Capt. A. F. RIGGS, Stockbridge.

To report to the commanding general, Northeastern Department, Major E. O. OTIS, Boston; Lieuts. C. A. BATES, Ashburnham; R. H. THOMPSON, Malden.

Michigan

To Camp Custer, Mich., base hospital, Lieut. F. J. ROBERTS, Detroit. Base hospital, for instruction, Capts. A. C. BUTTERFIELD, Grand Rapids; E. L. THIRLBY, Traverse City; Lieut. J. R. HANSEN, Greenville. For instruction, Major C. G. PARNALL, Jackson.

To Camp Grant, Ill., Lieut. J. COOPERSTEIN, Flint.

To Camp Pike, Ark., base hospital, for instruction, Capt. J. A. KIMZEY, Detroit.

To Camp Shelby, Miss., Lieut. A. G. KERSTEN, Detroit.

To Camp Zachary Taylor, Ky., base hospital, for instruction, Lieut. W. L. FINTON, Jackson.

To Fort Oglethorpe for instruction, Capts. E. K. HERDMAN, Ann Arbor; C. C. McCLELLAND, H. W. PLAGGEMEYER, Detroit; L. L. WILLOUGHBY, Flint; J. M. WRIGHT, Grand Rapids; Lieuts. V. H. DUMOND, Bay City; M. A. FECHEIMER, N. A. MALLORY, F. L. MILLIGAN, C. T. ROOT, L. E. STEPHENSON, W. P. WOODWORTH, R. L. ZIMMERMAN, Detroit; D. S. JICKLING, Flint; R. H. SNOWDEN, Galien; R. R. EATON, Grand Rapids; H. B. WEAVER, Greenville; J. H. CHARTERS, Houghton; D. B. MARSH, W. R. SNOW, Jackson; F. H. SHORTS, Kent City; R. C. ALLEN, St. Joseph.

To Fort Riley, Lieut. W. F. KAHL, Detroit.

To Mineola, N. Y., Hazelhurst Field, for instruction, Lieut. W. A. DEFNET, Detroit.

To New Haven, Conn., Yale Army Laboratory School, for instruction, Lieut. C. P. DRURY, Marquette.

To report to the commanding general, Central Department, Capt. T. C. IRWIN, Grand Rapids.

Minnesota

To Camp Custer, Mich., Lieut. C. A. BOREEN, Minneapolis.

To Camp Grant, Ill., base hospital, Lieut. J. A. WINTER, Duluth. Base hospital, for instruction, Lieuts. N. M. SMITH, Minneapolis; T. B. REEVES, Rochester.

To Camp Pike, Ark., Lieut. C. G. RICHARDS, Rochester.

To Camp Shelby, Miss., Capt. A. P. LOMMEN, Lansboro.

To Fort Oglethorpe for instruction, Capt. A. P. LOMMEN, Lanesboro; Lieuts. J. S. REYNOLDS, W. L. TAFT, Minneapolis; L. R. LIMA, Montevideo; C. A. McDONALD, Virginia.

To Fort Riley, Lieut. T. W. HOVORKA, St. Cloud. For instruction, Capt. Z. E. HOUSE, Cass Lake; Lieuts. O. DAIGNAULT, Benson; L. HARRIMAN, Howard Lake; S. H. OLSEN, Milaca; H. VAN DE ERVE, Minneapolis; A. G. BEYER, Red Wing; A. D. WHITING, St. Cloud.

Mississippi

To Camp Shelby, Miss., base hospital, for instruction, Lieut. S. L. STEPHENSON, Marks.

To Camp Travis, Texas, Lieut. S. W. PURIFOY, Yazoo City.

To Fort Oglethorpe for instruction, Lieuts. J. T. GOOGE, Booneville; R. N. WHITFIELD, Florence; E. D. KEMP, Highpoint; F. Z. GOSS, Kiln; M. BEEKMAN, Natchez.

Missouri

To Camp Beauregard, La., base hospital, for instruction, Capt. C. W. RUSSELL, Springfield.

To Camp Dodge, Iowa, base hospital, Lieut. J. C. LEYSER, Kansas City. Base hospital, for instruction, Capt. H. L. MONTAGUE, St. Louis.

To Camp Grant, Ill., Lieut. H. H. KRAMOLOWSKY, St. Louis.

To Camp Shelby, Miss., Lieut. C. SWITZER, Kansas City.

To Camp Sheridan, Ala., base hospital, Lieut. H. E. LIVINGSTONE, St. Louis.

To Camp Travis, Texas, base hospital, for instruction, Capt. E. T. URBAN, St. Louis.

To Camp Zachary Taylor, Ky., Lieut. H. S. MARSH, Kansas City.

To Fort Oglethorpe for instruction, Capts. E. HAFFNER, Hermann; B. G. HAMILTON, Kansas City; M. S. GRAY, St. Joseph; L. H. BEHRONS, St. Louis; Lieuts. P. J. ROSS, Grant City; B. BELOVE, J. FRISCHER, Kansas City.

To Fort Riley for instruction, Major B. A. LIEBERMAN, Kansas City; Capt. H. L. WILBUR, Granby; Lieuts. W. A. ROBERTSON, Allendale; J. B. STEINMETZ, Blackwell; M. M. RUSSELL, Chillicothe; E. G. GROVE, Fairfield; S. M. PARRISH, Fayette; R. R. ROBINSON, Hallsville; A. R. WILSEY, Hurdland; H. B. HARDMAN, Joplin; M. M. MILLER, Kansas City; J. R. HAMLIN, N. O. OWENS, La Grange; G. M. RAGSDALE, Paris; A. R. REMLEY, Pattensburg; B. S. POWELL, Princeton; W. F. BOTTS, Santa Fe; G. W. REEVES, Steelville; S. S. COX, Wellsville; E. C. SNAVELY, Zora.

To Plattsburg Barracks, N. Y., Capt. G. B. LEMMON, Springfield.

To report to the commanding general, Central Department, Lieut. L. B. NORTHCUTT, Washburn.

Montana

To Camp Dodge, Iowa, base hospital, for instruction, Capt. W. P. SMITH, Columbus.

To Camp Meade, Md., Lieut. G. F. TIDYMAN, Valier.

To Fort Oglethorpe for instruction, Capt. J. A. LAMB, Kalispell.

To Fort Riley for instruction, Lieuts. C. F. COULTER, Great Falls; E. W. TRAINER, Butte; A. A. FUSON, Hingham; R. W. APPELMAN, Lavina; C. D. POWELL, Valier.

Nebraska

To Camp Dodge, Iowa, base hospital, Capt. L. B. VAN CAMP, Omaha.

To Fort Riley for instruction, Capts. J. B. HOSKINS, Allen; G. H. MORRIS, Oshkosh; R. S. MITCHELL, Red Cloud; G. A. HARRIS, Valley; F. B. PATTERSON, Dodge; J. M. PACKER, Memphis; E. P. MURDOCK, Ogallala; D. W. VANDERHOOF, Sutherland; R. H. MORSE, Wisner.

To report to the commanding general, Central Department, Lieut. W. A. STALEY, Holbrook.

Nevada

To Fort Riley for instruction, Lieut. H. M. McINTIRE, East Ely.

New Hampshire

To Army Medical School, Lieut. A. W. MOORE, Loudon.

To Fort Oglethorpe for instruction, Lieut. B. L. FREEMAN, Suncook.

To report to the governor of New Hampshire, Capt. S. S. DEARBORN, Nashua.

New Jersey

To Army Medical School, Lieut. H. G. McBRIDE, Newark.

To Camp Devens, Mass., base hospital, for instruction, Lieut. H. C. MUNRO, Pleasantville.

To Camp Dix, N. J., base hospital, Capt. J. A. WHEELER, Jersey City.

To Camp Meade, Md., Capt. W. U. KRUTS, Asbury Park; Lieut. D. D. REALS, Newark. Base hospital, for instruction, Capt. W. W. MacALISTER, Paterson.

To Fort Oglethorpe for instruction, Capts. I. KAUFMAN, S. M. RUBINOW, Newark; Lieuts. L. P. STEINHART, Atlantic City; S. MESSINGER, Chrome; J. P. INSLEE, Palisades; J. N. FUCHS, V. LAEHDERFAN, C. F. ROUPP, Trenton.

To New Haven, Conn., Yale Army Laboratory School, for instruction, Capts. H. E. MATHEWS, D. W. POOR, Orange.

New Mexico

To Camp Cody, N. M., Lieut. F. R. HALSTEAD, Roswell. Base hospital, for instruction, Capt. H. A. MILLER, Clovis.

To Fort Riley for instruction, Lieut. J. M. WELLMAN, Des Moines.

New York

To Army Medical School, Lieuts. D. W. PARK, Brooklyn; W. F. GALLIVAN, Buffalo; A. M. HEALEY, New York.

To Camp A. A. Humphreys, Va., base hospital, for instruction, Lieut. R. J. PEARSON, Buffalo. *To examine the command* for nervous and mental diseases, Capt. W. C. DEAN, Brooklyn.

To Camp Devens, Mass., base hospital, Capt. G. H. ROCKWELL, Syracuse.

To Camp Dix, N. J., Lieut. D. WOLIN, Rochester. Base hospital, Capts. J. SAMENFELD, Brooklyn; T. BAILEY, M. D. LEDERMAN, Lieut. R. H. G. LAUB, New York. Base hospital, for instruction, Lieut. J. J. BURKE, Schenectady.

To Camp Greene, N. C., base hospital, Capt. H. W. COWPER, Buffalo.

To Camp Jackson, S. C., Capt. D. E. HOAG, New York.

To Camp Lee, Va., Lieuts. J. J. YORK, Schenectady. N. J. CONAN, Syracuse.

To Camp McClellan, Ala., to examine the command for nervous and mental diseases, Capt. J. L. ECKEL, Buffalo.

To Camp Meade, Md., Capts. R. KIMPTON, Binghamton; E. H. HUTTON, Corning; Lieuts. J. YAMPOLSKY, New York; I. V. O. DECKER, Troy. For instruction, Lieuts. F. V. VINSKI, Brooklyn; A. A. GERESOLA, Fort Slocum.

To Camp Sevier, S. C., base hospital, Lieut. J. J. MADDEN, New York.

To Camp Upton, N. Y., Lieut. B. F. SENFTENBERG, Cedarhurst. Base hospital, for instruction, Capt. J. W. HANNETT, Johnson City.

To Camp Wheeler, Ga., Lieut. C. MacCOY, Brooklyn.

To Fort Leavenworth, Texas, Capt. V. V. ANDERSON, Albany.

To Fort Oglethorpe for instruction, Capts. W. H. NEVILLE, Auburn; E. L. SWAN, Brooklyn; G. R. CUTTING, L. KAUFFMAN, Buffalo; F. L. FLYNN, J. A. ROBERTSON, J. C. STAMMERS, New York; R. M. MacRAE, Staten Island; Lieuts. A. F. DEGRAFFENRIED, Boyside; S. M. BRUSILOWSKY, L. L. COHEN, J. DOLIN, B. GOLDFARB, S. KNOPP, P. MININBERG, D. E. WELCH, Brooklyn; H. D. ANDREWS, H. C. GUESS, W. B. HARRISON, A. HORWITZ, R. A. PAXTON, J. SCHWEITZER, Buffalo; W. A. PALMER, Elmira; N. H. RYAN, Fort Slocum; H. M. PHIPPS, Hempstead; M. A. PLACE, Hornell; R. GORDNER, Middletown; S. W. BOORSTEIN, W. I. BUDINGTON, T. W. CAREY, B. EDELSACK, W. A. FLICK, H. GOLDMAN, R. B. HOOD, E. W. LAWRENCE, W. H. LIVINGSTON, C. F. LONGFELLOW, F. A. MANZELLA, R. L. McGREADY, M. P. PODGUR, H. P. POSNER, R. RAPP, L. ROSEN, W. ROSENSON, J. S. SMITH, W. R. SPARKS, M. E. TRASK, J. J. UNGER, New York; J. C. PLAIN, Ransomville; H. M. GROGAN, W. F. RAFFERTY, Rensselaer; G. M. HEBER, Richmond Hill; W. H. CADMUS, T. T. HUNTINGTON, A. J. PRICE, J. K. QUIGLEY, Rochester; B. W. ROY, Schenectady; D. U. GOULD, Sherburne; C. D. REID, Jr., Syracuse.

To Fort Ontario, N. Y., Capt. A. M. WOSE, Syracuse.

To Hoboken, N. J., Capt. L. REU, Buffalo; Lieuts. D. M. ALLISON, Camden; J. A. BURNS, Wilson.

To Long Island City, N. Y., Lieut. F. C. McDANIEL, New York.

To New Haven, Conn., Capt. E. P. KOLB, Holtsville.

To Newport News, Va., Lieut. E. R. SPRAGUE, Rochester.

To New York, Cornell Medical College, for instruction, Lieuts. A. J. P. PACINI. Neurological Institute, for intensive training, Lieuts. H. V. GIANCOTIERI, Brooklyn; H. J. SHEFFIELD, Frankfort; F. J. LABRUIER, New York.

To Niagara Falls, N. Y., Lieut. W. L. WILSON, Niagara Falls.

To Plattsburg, N. Y., Capts. C. L. CARLISLE, Albany; L. BLUMGART, New York; W. H. KIDDER, Oswego; Lieut. W. J. BERNIS, Rochester.

To report to the commanding general, Eastern Department, Capts. A. W. JACKSON, Albion; F. J. DUFFEY, Brooklyn; W. K. O'CALLAGHAN, Buffalo; T. MacRAE, New York; G. GARUCCI, Rochester;

Lieuts. J. H. SMITH, Brooklyn; M. M. PESHKIN, Fort Slocum; C. J. MILLIS, New York.

To Syracuse, N. Y., Capt. T. F. LAURIE, Syracuse.

To Walter Reed General Hospital, D. C., Capt. C. OGILVY, New Rochelle.

To Washington, D. C., St. Elizabeth's Hospital, for intensive training, Lieut. W. H. LANE, Buffalo.

North Carolina

To Baltimore, Md., Lieut. J. R. ASHE, Charlotte.

To Fort Oglethorpe for instruction, Lieuts. J. S. HARRISON, Elm City; W. F. ELLIOTT, Lincolnton; J. B. WATSON, Raleigh.

To New Haven, Conn., Capts. J. E. ASHCRAFT, Monroe; S. P. BASS, Tarboro; Lieut. B. O. EDWARDS, Landis.

North Dakota

To Fort Riley for instruction, Lieuts. R. W. STOUGH, Beach; J. W. TOWEY, Langdon; M. G. FLATH, Stanley.

Ohio

To Camp Custer, Mich., Lieut. R. C. TARBELL, Columbus.

To Camp Grant, Ill., Lieut. E. L. SILBERSTEIN, Cincinnati.

To Camp Greene, N. C., Lieut. F. E. HART, Canton.

To Camp Meade, Md., Lieut. C. C. ROLLER, Akron.

To Camp Pike, Ark., base hospital, for instruction, Lieut. I. C. KISER, Piqua.

To Camp Sherman, Ohio, base hospital, Capt. A. F. SHEPHERD, Dayton. Base hospital, for instruction, Capt. J. G. BLOWER, Lieut. A. W. McCANDLESS, Akron. *To examine the command* for nervous and mental diseases, Lieut. E. A. BABER, Dayton.

To Camp Upton, N. Y., base hospital, Lieut. A. B. McCONAGHA, Worthington.

To Camp Zachary Taylor, Ky., base hospital, Lieuts. L. I. NELSON, Cincinnati; W. J. MANNING, Lakewood.

To Colonia, N. J., Capt. C. M. SHEPARD, Columbus.

To Fairfield, Ohio, Wilbur Wright Field, Capt. A. C. MESSENGER, Xenia.

To Fort Benjamin Harrison, Lieuts. E. W. GRUBB, Akron; C. C. TAYLOR, East Rochester.

To Fort Oglethorpe for instruction, Capts. N. E. FRIEDMAN, K. S. WEST, Cleveland; H. A. SLUSSER, Dayton; G. D. LOWRY, Delaware; B. O. KREILICK, Fremont; F. H. LEVER, Loveland; F. J. GEORGE, Okeana; Lieuts. J. B. WILKINSON, Alliance; F. F. AYRES, Brunswick; P. DeCOURCY, O. L. GOLDBERG, Cincinnati; H. A. MAHRER, F. H. MOHRMAN, Cleveland; H. PRUSHING, Columbus; G. N. WENGER, Dalton; J. R. McDANIEL, East Fultonham; G. B. MAXWELL, Fredericksburg; J. G. McNAMARA, Green Camp; W. T. TRAVIS, Leetonia; E. E. CAMPBELL, Logan; F. E. ROSNAGLE, London; T. R. DICKSON, Norwood; J. V. TAYLOR, New Philadelphia; F. C. HARMAN, Ottoville; J. W. WENTZ, Pataskale; W. D. SCHAFER, Portsmouth; J. T. DUNCAN, W. L. RHONEHOUSE, E. F. VETTER, Toledo; L. W. NAUS, Upper Sandusky.

To Fort Riley, Lieuts. F. J. MELZER, Cleveland; J. A. PARK, Lima; W. D. PORTERFIELD, New Marshfield. For instruction, Capt. G. A. MACK, Gallipolis.

To New Haven, Conn., Lieut. W. C. BREIDENBACH, Dayton. Yale Army Laboratory School, for instruction, Capt. N. D. GOODHUE, Dayton; Lieut. R. L. BARNES, Columbus.

To report to the commanding general, Central Department, Capt. E. E. PETERS, Bradley; Lieut. B. S. CRANSTON, New London.

Oklahoma

To Camp Pike, Ark., base hospital, for instruction, Lieut. R. WALKER, Pawhuska.

To Fort Riley, Lieut. J. DONOHOO, Tulsa. For instruction, Capt. L. H. HUFFMAN, Hobart; Lieuts. J. L. HOLLAND, Madill; A. J. WILLIAMS, McLoud; J. H. BEATTY, J. C. DOVELL, Miami; E. W. MABRY, Tipton; E. A. SPITZ, Tulsa.

To Fort Sill, Okla., Capt. G. PINNELL, Miami.

To report to the commanding general, Southern Department, Lieut. S. P. STROTHER, Boldenville.

Oregon

To Camp Fremont, Calif., Capt. S. H. SHELDON, Portland.

To Camp Lewis, Wash., Lieuts. W. T. JOHNSON, Corvallis; T. M. GILMORE, Imbler; R. B. MILLER, Lebanon; C. L. WILLIAMS, McMinnville; E. BENNETT, Monroe; C. G. RATTNER, Portland. Base hospital, Lieut. J. H. KAVANAUGH, Pendleton; R. B. KARKEET, E. N. NEULEN, Portland. Base hospital, for instruction, Capts. W. F. AMOS, C. G. SABIN, F. J. ZIEGLER, Portland.

To Fort Oglethorpe for instruction, Lieuts. G. A. CATHEY, R. A. PAYNE, J. F. SMITH, Portland.

To Fort Riley for instruction, Lieuts. B. R. WALLACE, Albany; A. A. SOULE, Klamath Falls.

To report to the commanding general, Western Department, Capts. B. F. ROSEMAN, Elgin; C. SEAMANN, Portland; Lieuts. J. E. BRIDGWATER, Albany; J. O. C. WILEY, Portland.

To San Francisco, Calif., Letterman General Hospital, Capt. W. T. PHY, Hot Lake.

To Washington, D. C., Major J. A. PETTIT, Portland.

Pennsylvania

To Army Medical School, Lieut. C. G. RENN, Lairdsville.

To Baltimore, Md., Capt. J. P. LAIRD, Devon.

To Camp Lee, Va., base hospital, for instruction, Lieut. A. F. HARDT, Williamsport.

To Camp Meade, Md., for instruction, Lieuts. B. LIPSHUTZ, Philadelphia; L. F. WAY, Reading.

To Camp Sherman, Ohio, base hospital, Lieut. H. P. LYNCH, Monongahela.

To Camp Zachary Taylor, Ky., base hospital, Capt. J. J. SULLIVAN, Jr., Scranton.

To Fort Oglethorpe for instruction, Capts. E. V. KYLE, Christiana; W. N. KAYLOR, Leacock; O. G. LEWIS, Washington; J. HEMPHILL, West Chester; Lieuts. J. B. PRICE, Allentown; R. E. MILLER, Bloomsburg; M. U. McINTIRE, Boswell; C. E. HERMAN, Carnegie; H. M. ARMITAGE, Chester; G. T. LUKENS, Conshohocken; H. W. BELL, Crafton; H. E. McCORMICK, A. B. MUSA, E. W. RICHARDS, Easton; G. D. LUCE, Jenks; F. A. DONLAN, Lilly; J. M. GEMMILL, Millville; M. M. TEPLITZ, Mont Alto; H. BLUMSWEIG, W. G. BOEHRINGER, E. L. BRITTINGHAM, C. H. LYON, G. ROSENBAUM, H. W. SCARLETT, J. H. SCHAEFFER, Philadelphia; W. A. CAVEN, H. R. GOLDSTEIN, C. L. McCULLOUGH, G. H. McKINSTRY, E. W. STEVENSON, C. M. STRAESSLEY, O. H. SWARTZ, Pittsburgh; S. GROSE, Scranton; J. C. POFFENBERGER, Sunbury.

To Hoboken, N. J., Lieut. W. UDELL, Philadelphia.

To New Haven, Conn., Yale Army Laboratory School, for instruction, Lieut. T. P. TREDWAY, Erie.

Philippine Islands

To Philippine Department, Lieuts. TIETZE, Baguio; J. W. LEWIS, Canlubang.

Porto Rico

To Camp Las Casas, P. R., Lieuts. M. J. BERRIOS, Yabucoa; L. VELEZ, Yauco. Base hospital, Lieut. F. DE JUAN, Jr., San Juan.

Rhode Island

To Fort Oglethorpe for instruction, Lieuts. B. CHAPAS, Providence; T. J. McLAUGHLIN, Woonsocket.

South Carolina

To Camp Meade, Md., Lieut. S. FRIEDHEIM, Rock Hill.

To Fort Oglethorpe for instruction, Capt. S. A. WIDEMAN, Townville; Lieuts. C. D. BOETTE, Charleston; S. L. PARNELL, Lamar; R. H. FOLK, Lexington; B. C. TEAM, Ridgeway; F. A. LAWTON, Scotia; L. G. BROOKER, Swansea.

South Dakota

To Fort Riley for instruction, Lieuts. W. E. DICKINSON, Canistota; J. R. WESTABY, Clark; C. H. SWETT, Winner.

Tennessee

To Fort Oglethorpe for instruction, Lieuts. H. RENNER, G. F. RYAN, Chattanooga; R. W. KISSANE, Dyersburg; F. C. JAMES, Gadsden; J. L. DUNAVANT, Glimp; T. Z. ELINOR, Greenfield; T. A. CALDWELL, Jefferson City; J. D. CAPPA, Livingston; A. L. BLECKER, Memphis; T. H. YOUNG, Nashville; L. S. LOVE, Silver Point.

To New Haven, Conn., for instruction, Lieut. H. SPITZ, Nashville.

Texas

To Camp Cody, N. M., Lieut. O. H. JUDKINS, Corpus Christi.

To Camp Jackson, S. C., Lieut. A. R. SUPER, Dallas. Base hospital for instruction, Capt. G. W. ALLEN, Jr., Yorktown.

To Camp Logan, Texas, Lieut. O. J. COLWICK, Clifton. Base hospital, Lieut. H. S. GARLICK, Laredo. Base hospital, for instruction, Lieut. S. M. HILL, Dallas.

To Camp MacArthur, Texas, base hospital, Capt. S. S. BECKLEY, San Antonio.

To Camp Travis, Texas, Capt. S. T. HARRIS, El Paso; Lieut. T. E. DUNNAM, Spring. Base hospital, for instruction, Lieut. R. L. LEWIS, Paris.

To Fort Oglethorpe for instruction, Capts. W. E. CROW, Dallas; E. B. AULER, Elgin; W. S. HAMILTON, San Antonio; Lieuts. J. H. MASSIE, Floydada; J. B. JENKINS, Mooreville; G. C. SANDERS, Richards; H. C. WEAVER, Rule; R. E. CROCKETT, Thorndale.

To Fort Riley, Capt. W. C. KIMBROUGH, Denton; Lieut. W. N. WARREN, Center. For instruction, Lieuts. C. H. DAVIS, Arlington; G. A. LILLIE, Batson; W. P. FARRINGTON, Munday; H. H. TAYLOR, San Saba.

To Hampton, Va., Langley Field, Lieut. H. P. DEADY, El Paso.

To Houston, Texas, Capt. S. M. LISTER, Houston.

To report to the commanding general, Southern Department, Capt. B. L. JENKINS, Clarendon; Lieuts. E. H. SAUVIGNET, Laredo; W. H. DUNN, Rochester.

Utah

To Army Medical School, Lieut. T. J. HOWELLS, Salt Lake City.

To Camp Cody, N. M., base hospital, for instruction, Capt. W. A. COLTON, Salt Lake City.

To Camp Lewis, Wash., Lieut. M. J. SEIDNER, Ogden.

To Fort Oglethorpe for instruction, Lieut. W. SHEPHERD, Beaver.

To Fort Riley for instruction, Lieut. W. L. SUTHERLAND, Storrs.

Vermont

To Camp Devens, Mass., base hospital, Capt. W. R. NOYES, Brattleboro.

To Camp Meade, Md., Capt. W. T. SLAYTON, Morrisville.

To report to the commanding general, Northeastern Department, Lieut. J. L. WELSH, Proctor.

Virginia

To Army Medical School, Capt. I. L. CHAPMAN, Norfolk.

To Camp Meade, Md., Capt. E. T. HARGRAVE, Norfolk.

To Camp Sevier, S. C., Capt. M. L. REA, Charlottesville.

To Fort Oglethorpe for instruction, Capt. I. M. ROBINSON, Danville; Lieuts. G. E. FAULKNER, J. C. SLEET, Norfolk; J. L. KENT, Pulaski; B. C. MOOMAW, Roanoke; C. JONES, Staunton; G. T. DIVERS, Stuart.

To Richmond, Va., for instruction, Lieut. J. W. ABBITT, Port Norfolk.

To Walter Reed General Hospital, D. C., Capt. G. B. LAWSON, Roanoke.

Washington

To Camp Jackson, S. C., base hospital, Major E. E. HEG, Kent.

To Camp Lewis, Wash., Capt. E. M. ASHLEY, Spokane; Lieuts. W. M. MUNSELL, Grandview; F. P. C. DAVIS, Kelso; E. A. RICKARDS, C. H. TURPIN, Seattle; C. F. RIGG, Spokane; A. W. SCHULZ, Tacoma; C. R. DUNCAN, Wapato. Base hospital, Capt. H. V. WURDEMANN, Lake Forest Park; E. R. Northrup, Lieut. O. M. ROTT, Spokane. Base hospital, for instruction, Lieuts. T. TORLAND, Seattle; A. R. LUNDGREN, Spokane. For instruction, Lieut. A. R. McKEOWN, Leavenworth.

To Denver, Colo., Lieut. F. A. SLYFIELD, Seattle.

To Fort Oglethorpe for instruction; Capt. A. A. MATTHEWS, Spokane; Lieuts. R. J. JAMES, Seattle; R. S. VAN PELT, Tacoma.

To Fort Riley for instruction, Capt. J. GREEN, Tacoma; Lieuts. H. F. THIEL, Creston; A. G. TULLAR, Kennewick.

To report to the commanding general, Western Department, Lieut. J. A. LaGASA, Tacoma.

West Virginia

To Camp Hancock, Capt. C. A. WINGERTER, Wheeling.

To Camp Lee, Va., base hospital, Capt. H. E. OESTERLING, Wheeling.

To Fort Benjamin Harrison, Capt. J. M. HOUSTON, Elm Grove.

To Fort Oglethorpe for instruction, Capt. R. W. DUNHAM, Bernis; Lieuts. W. G. C. HILL, Cameron; A. D. S. LILLY, Crystal; E. D. MOYERS, Harrisville; R. G. STOTTS, Kenova; J. H. LUIKART, Moundsville; I. V. GRISSOM, Princeton; F. V. LANGFITT, Salem; H. E. DAVIS, Switzer; H. L. STRANDBERG, Terra Alta; G. C. BLAKE, Tunnelton.

To New Haven, Conn., Lieut. H. C. SLAUGHTER, Charleston.

Wisconsin

To Camp Grant, Ill., base hospital, for instruction, Lieut. B. C. TARNUTZER, Beaver Dam.

To Camp Pike, Ark., Lieut. H. C. STOLTZ, Milwaukee.

To Camp Sherman, Ohio, base hospital, Capt. A. G. HOUGH, Madison.

To Fort Oglethorpe for instruction, Lieut. A. J. WILLIAMS, Waukesha.

To Fort Riley for instruction, Capt. M. E. RIDEOUT, Hortonville; Lieuts. A. C. EDWARDS, Arcadia; M. P. ANDREWS, Beloit; F. BABCOCK, Cumberland; J. L. BENDER, Ithaca; O. H. ANDERSON, Plum City; C. M. ANDERSON, Wild Rose.

To report to the commanding general, Central Department, Lieut. J. W. TARTER, Iron River.

Wyoming

To Camp Dodge, Iowa, base hospital, Capt. J. H. HOLLAND, Evanston.

To Fort Riley for instruction, Lieut. H. P. HANSEN, Burns.

To report to the commanding general, Western Department, Capt. H. E. McCOLLUM, Laramie; Lieut. J. R. MARQUIS, Kemmerer.

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Alabama

To Camp Crane, Pa., surgical group, from Fort Oglethorpe, Capt. R. C. JONES, Mobile.

To Camp Greene, N. C., from Fort Oglethorpe, Lieut. G. R. COLLIER, Tuskegee.

To F [illegible] spital, from Camp Wheeler, Capt. A. C. [illegible] Evacuation hospital, from Camp Bowie, [illegible] irmingham.

To Otisville, N. Y., from Fort Slocum, Lieut. A. D. McFADDEN, Ariton.

To San Antonio, Texas, Kelly Field, from Montgomery, Lieut. G. A. CRYER, Anniston.

Arizona

To Fort Niagara, N. Y., from Camp Grant, Capt. E. DARRAGH, Bisbee.

Arkansas

To Camp Crane, Pa., evacuation hospital, from Camp Devens, Lieut. S. C. ANDREWS, Waldo.

To Camp MacArthur, Texas, from Fort Des Moines, Major W. A. SNODGRASS, Little Rock.

To Camp Sevier, S. C., base hospital, from Fort Oglethorpe, Lieut. J. C. LAND, Walnut Ridge.

To Columbus, Ohio, from Fort Riley, Lieut. O. C. STRUTHERS, Siloam Springs.

To Fort Oglethorpe for instruction, Lieut. L. H. STOUT, Forrest City.

To San Antonio, Texas, Kelly Field, from West Point, Lieut. J. S. DAVIDSON, Marvell. As tuberculosis examiner from Camp Dodge, Major P. C. WILLIAMS, Texarkana; from Camp Travis, Lieut. H. M. STRACHAN, Hot Springs.

California

To Camp Beauregard, La., from Fort Sill, Lieuts. W. C. DUNCAN, Los Angeles; W. K. BIXBY, Sebastopol.

To Camp Cody, N. M., base hospital, for instruction, from Camp Kearney, Lieut. E. H. CRABTREE, San Diego.

To Camp Crane, Pa., base hospital, from San Francisco, Major A. C. CARLTON, San Mateo.

To Camp Greene, N. C., from Lincoln, Neb., Capt. G. B. HAMILTON. Oakland.

To Camp Kearney, Calif., Capt. C. C. FALK, Eureka; from Camp McClellan, Major J. D. CONDIT, Pasadena.

To Camp McClellan, Ala., base hospital, from Camp Crane, Capt. W. P. MILLIKEN, Oakland.

To Fort Oglethorpe, from Camp Kearney, Lieuts. C. A. ROBINSON, Ione; W. F. PRIESTLEY, Stockton.

To Fort Stevens, Ore., as tuberculosis examiner from Camp Fremont, Major J. A. PARKS, San Diego.

To Fort Winfield Scott, Calif., as tuberculosis examiner, from Camp Fremont, Major W. R. P. CLARK, San Francisco; Capt. J. E. FAHY, Los Angeles.

To Fort Worden, Wash., as tuberculoseis examiner, from Camp Fremont, Capt. H. A. HOIT, Pasadena.

To San Francisco, Calif., Leland Stanford University, to give orthopedic instruction, Capt. L. W. ELY, San Francisco.

To Washington, D. C., for conference, and on completion *to San Antonio, Texas,* Kelly Field, as flight surgeon, from Mineola, Lieut. C. E. HOLGATE, Los Angeles.

Canal Zone

To Walter Reed General Hospital, D. C., from New Haven, Capt. L. B. BATES, Ancon.

Colorado

To Camp Beauregard, La., from Fort Sill, Lieut. C. C. BELL, Denver.

To Denver, Colo., Capt. G. W. HOLDEN, Denver.

To Fort H. G. Wright, N. Y., from Camp Grant, Capt. F. H. HARRISON, Fraser.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to his proper station,* from Camp Dix, Capt. E. G. GRIFFIN, Denver.

Connecticut

To Camp Abraham Eustis, Va., from Fort Oglethorpe, Lieut. J. H. ROOT, Waterbury.

To Camp Gordon, Ga., base hospital, for instruction, from Camp Greene, Lieut. R. W. LOWE, Ridgefield.

To Camp MacArthur, Texas, to examine drafted men for cardiovascular diseases, from Camp Sheridan, Capt. R. S. STARR, Hartford.

To Fort Oglethorpe for instruction, from New York, Lieut. C. D. DEMING, Hartford.

To Hoboken, N. J., evacuation hospital, from Fort Oglethorpe, Capt. C. K. PETERSON, Lakeville.

To San Antonio, Texas, Kelly Field, to examine drafted men for cardiovascular diseases, from Jefferson Barracks, Lieut. F. M. SMITH, Willlimantic.

Delaware

To Camp Lee, Va., from Fort Oglethorpe, Lieut. **V. D.** WASHBURN, Wilmington.

District of Columbia

To Camp Beauregard, La., Col. G. H. SCOTT.

To Camp Dodge, Iowa, Lieut.-Col. J. F. EDWARDS.

To Camp Fremont, Calif., as camp surgeon, from Washington, Lieut.-Col. H. H. SHARPE.

Florida

To Camp Devens, Mass., base hospital, from New York, Capt. L. A. PEEK, West Palm Beach.

To Camp Jackson, S. C., base hospital, for instruction, from Camp MacArthur, Capt. J. Y. PORTER, Jr., Key West Barracks.

To Mount Pleasant, Mich., Central Michigan Normal School, and on completion *to Columbus, Ohio,* from Ann Arbor, Capt. B. E. VAUGHAN, Palmette.

To San Antonio, Texas, Kelly Field, from Arcadia, Lieut. R. E GILBERT, Jacksonville.

To Washington, D. C., Surgeon-General's Office, from Camp A. A. Humphreys, Capt. R. C. HUBBARD, Bushnell.

Georgia

To Camp McClellan, Ala., base hospital, from Camp Crane, Capt. C. K. SHARPE, Arlington.

To Fort Oglethorpe, base hospital, from Camp Pike, Lieut. J. M. HARTLEY, Zebulon. Evacuation hospital, from Camp Jackson, Lieut. E. B. ANDERSON, Atlanta.

To New York, Bellevue Hospital, for instruction, and on completion *to his proper station,* from Camp Sherman, Lieut. S. T. R. REVELL, Louisville.

To San Antonio, Texas, Kelly Field, from Fort Wayne, Capt. J. M. SPENCE, Camilla.

The following order has been revoked: To Fort Oglethorpe, evacuation hospital, from Camp Gordon, Lieut. J. H. CAMPBELL, Jefferson.

Hawaii

To Camp Cody, N. M., from Hawaiian Department, Major A. V. HENNESSY, Honolulu.

Illinois

To Boston, Mass., Parker Hill, from Camp Grant, Capt. L. B. PHELPS, Chicago; from Camp Greene, Capt. W. A. CLARK, Chicago.

To Camp Crane, Pa., as tuberculosis examiner, from Syracuse, Lieut. J. SCHLESINGER, Oak Forest. Evacuation hospital, from Camp Lee, Capt. S. R. CATLIN, Rockford; from Camp Pike, Capt. C. W. COMPTON, Springfield. Surgical group, from Camp Sherman, Capt. E. WINDMUELLER, Woodstock.

To Camp Custer, Mich., base hospital, for instruction, Capt. A. N. CLAGETT, Oak Park.

To Camp Devens, Mass., base hospital, for instruction, from Fort Warren, Lieut. J. L. WEBB, Chicago.

To Camp Lee, Va., from Syracuse, Capt. E. A. OLIVER, Chicago.

To Camp MacArthur, Texas, as tuberculosis examiner, from Camp Grant, L. NEWMAN, Chicago.

To Camp Pike, Ark., from Camp Grant, Lieut. H. CULVER, Chicago.

To Camp Sevier, S. C., base hospital, from Fort Oglethorpe, Capt. G. H. MOORE, Aledo.

To Camp Shelby, Miss., as tuberculosis examiner, from Camp Zachary Taylor, Capt. W. H. CREDE, Lamoille.

To Camp Upton, N. Y., base hospital, from New York, Lieut. C. W. SEEVER, Sheldon.

To Camp Wadsworth, S. C., from Camp Kearney, Capt. S. M. MILLER, Peoria; from Camp Shelby, Lieut. A. PEARMAN, Rockford.

To Chicago, Ill., from Jefferson Barracks, Lieut. R. D. LUSTER, Granite Hill.

To Fort Dupont, Del., from Army Medical School, Lieut. H. L. LeSAULNIER, Red Bud.

To Fort Oglethorpe, from Camp Hancock, Lieut. H. P. REUSS, Granite City. Evacuation hospital, from Camp Beauregard, Lieut. J. C. GARARD, Chicago. For instruction, Lieut. J. P. SIMPSON, Palmer.

To Lawrenceville, N. J., from Camp Beauregard, Capt. J. E. WALTON, Medora.

To Markleton, Pa., from New Haven, Capt. G. ELLISON, Chicago.

To Mineola, N. Y., Hazelhurst Field, for instruction, from Camp Joseph E. Johnston, Capt. F. I. BROWN, Chicago; from Camp Sevier, Lieut. J. N. BUCHANAN, Freeport.

To New York, Bellevue Hospital, for instruction, and on completion *to Camp Meade, Md.,* base hospital, for instruction, from Rockefeller Institute, Lieut. P. E. GREENLEAF, Bloomington. On completion *to his proper station,* from Camp Sherman, Lieut. J. W. KELLY, Chicago.

To San Antonio, Texas, Kelly Field, as tuberculosis examiner, from Camp Dodge, Lieuts. R. W. DUNHAM, Chicago; T. C. WEBER, West Salem.

To Walter Reed General Hospital, D. C., and on completion *to Boston, Mass.,* from Hoboken, Major P. B. MAGNUSON, Chicago.

To Washington, D. C., for conference, and on completion *to Mineola, N. Y.,* Hazelhurst Field, for instruction, from San Antonio, Capt. H. E. MIZE, Chicago.

To West Baden, Ind., from Azalea, N. C., Lieut. J. W. MORAN, Oak Forest.

Indiana

To Boston, Mass., from Walter Reed General Hospital, Capt. L. A. BOLLING, Attica.

To Camp A. A. Humphreys, Va., as tuberculosis examiner, from Camp Devens, Lieut. J. J. GROSVENOR, Richmond.

To Camp Alfred Vail, N. J., from Camp Grant, Capt. R. E. JONES, Clayton.

To Camp Dix, N. J., base hospital, from New York, Capt. B. W. CHIDLAW, Hammond.

To Camp Grant, Ill., from Camp McClellan, Lieut. S. F. TEAFORD, Paoli.

To Camp Greene, N. C., from Fort Oglethorpe, Lieut. N. L. MEDCALF, Lamar.

To Camp McClellan, Ala., as assistant sanitary inspector, from Fort Oglethorpe, Capt. F. HODGES, Indianapolis. Base hospital, from Fort Benjamin Harrison, Capts. S. R. CLARK, Petersburg; J. L. McBRIDE, Zanesville; Lieut. O. M. JOHNSON, Kokomo.

To Camp Wadsworth, S. C., from Fort Oglethorpe, Lieut. F. J. McMICHAEL, Gary.

To Houston, Texas, Ellington Field, from Mineola, Lieut. B. J. PETERS, Kokomo.

To Madison Barracks, N. Y., from Camp Grant, Capt. S. A. CLARK, South Bend.

To Saltville, Ga., from Fort Oglethorpe, Lieut. R. E. SWOPE, Rockville.

Iowa

To Camp Cody, N. M., from Hawaiian Department, Major A. V. HENNESSY, Council Bluffs.

To Camp Wheeler, Ga., as orthopedic surgeon, and on completion *to Boston, Mass., Harvard Graduate School of Medicine*, for instruction, from Fort Oglethorpe, Lieut. W. J. FENTON, Mystic.

To Fort Dupont, Del., from Fort Riley, Lieut. F. E. SIMERAL, Brooklyn.

To Fort H. C. Wright, N. Y., from Camp Grant, Capt. N. W. JOHNSON, Cedar Rapids.

To Mineola, N. Y., Hazelhurst Field, for instruction, from Rockefeller Institute, Capt. T. S. GITTENS, Iowa City.

To Newport News, Va., from Camp Morrison, Lieut. F. L. SECOY, Sioux City.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to Camp Zachary Taylor, Ky.*, base hospital, for instruction, from Fort Riley, Capt. W. RUML, Cedar Rapids.

To San Antonio, Texas, Kelly Field, as tuberculosis examiner, from Camp Custer, Capt. L. L. CRAVEN, East Peru.

To Sewanee, Tenn., University of the South, *from* Fort Oglethorpe, Capt. C. F. SMITH, Des Moines.

To Washington, D. C., from Camp Dodge, Lieut.-Col. E. W. RICH.

Kansas

To Camp Crane, Pa., evacuation hospital, from Fort Riley, Lieut. W. L. BUTLER, Stafford.

To Fort Hunt, Va., from Camp Grant, Capt. J. C. CALDWELL, Wellington.

To Fort Oglethorpe, Ga., evacuation hospital, from Camp McClellan, Lieut. E. J. BRIBACH, Atchison.

To San Antonio, Texas, Kelly Field, from Garden City, Lieut. W. H. ROBINSON, Eudora.

To Walter Reed General Hospital, D. C., from New Haven, Capt. H. R. MAJOR, Rosedale.

Kentucky

To Camp A. A. Humphreys, Va., as tuberculosis examiner, from Camp Devens, Lieut. W. T. LITTLE, Calvert City.

To Camp Abraham Eustis, Va., from Fort Oglethorpe, Lieut. T. E. CRAIG, Colesburg.

To Camp Alfred Vail, N. J., *from Fort Oglethorpe*, Lieut. J. C. CLEM, Louisville.

To Camp Bragg, N. C., as camp sanitary inspector, from Fort Oglethorpe, Capt. J. D. MAGUIRE, Lexington.

To Camp Devens, Mass., from Camp Upton, Capt. R. W. OGILVIE, Princeton.

To Camp Sevier, S. C., base hospital, from Fort Oglethorpe, Capt. R. L. WOODWARD, Hopkinsville.

To Camp Wadsworth, S. C., from Camp Gordon, Lieut. G. BELOTE, Mayfield.

To New Haven, Conn., Yale Army Laboratory School, for instruction, from Fort Omaha, Lieut. S. T. SMOCK, Glasgow.

To Newport News, Va., from Camp Pike, Major G. H. DAY, Louisville.

Louisiana

To Camp McClellan, Ala., as orthopedic *surgeon, from* Newport News, Lieut. R. C. VOSS, New Orleans.

To Camp Shelby, Miss., base hospital, Capt. E. KIBLINGER, Marksville. Base hospital, for instruction, from Fort Oglethorpe, Lieut. M. J. GELPI, New Orleans.

To Camp Upton, N. Y., base *hospital*, from New York, Capt. L. O. CLARK, Lafayette.

To New Haven, Conn., Yale Army Laboratory School, for instruction, from Rockefeller Institute, Lieut. J. R. STAMPER, Caspiana.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to his proper station*, from Camp MacArthur, Lieut. W. N. HANKINS, Derry.

To Washington, D. C., from Camp Beauregard, Lieut.-Col. H. P. CARTER.

Maine

To Camp Sevier, S. C., base hospital, from *Fort Oglethorpe*, Lieut. S. N. VOSE, *Madison*.

To Camp Wadsworth, S. C., from Camp Gordon, Major W. L. COUSINS, Portland.

To Fort Oglethorpe, base hospital, from Camp Crane, Major T. O. VANAMEE, Portland.

To San Antonio, Texas, Kelly Field, from Garden City, Lieut. R. D. WALTON, Frankfort.

To Washington, D. C., Surgeon-General's Office, from Walter Reed General Hospital, Capt. H. K. RICHARDSON, Bradford.

The following order has been revoked: *To Fort Oglethorpe* for instruction, Lieut. H. W. STANWOOD, Rumford.

Maryland

To Camp Crane, Pa., base hospital, from Fort Des Moines, Lieut. E. NOVAK, Baltimore.

To Camp McClellan, Ala., base hospital, from Camp Crane, Capt. T. J. COONAN, Westminister.

To Camp Meade, Md., base hospital, from *Fargo*, Lieut. C. L. CALLANDER, Baltimore.

To Camp Sevier, S. C., base hospital, from Fort Oglethorpe, Lieut. J. A. SKLADOWSKY, Baltimore.

To Cape May, N. J., from Colonia, Major R. FAYERWEATHER, Baltimore.

To Fort Oglethorpe, as instructor, from New York, Lieut. S. COBB, Baltimore. For instruction, from Camp *Sherman*, *Lieut.* F. G. COWHERD, Cumberland.

To San Antonio, Texas, Kelly Field, as tuberculosis examiner, from Camp Custer, Lieut. L. L. JACOBS, Baltimore.

The folowing order has been *revoked*: *To Fort Oglethorpe* for instruction, Lieut. H. H. STANSBURY, Baltimore.

Massachusetts

To Boston, Mass., from duty as a contract surgeon, Lieut. G. H. POIRIER, Boston.

To Camp Crane, Pa., base hospital, from Camp Devens, Major E. A. DARLING, Cambridge. *Evacuation hospital, from* Camp Upton, Lieut. C. W. STANSFIELD, Fall River.

To Camp Custer, Mich., to examine the troops for cardiovascular diseases, from Lakewood, *Capt.* G. M. ALBEE, Worcester.

To Camp Gordon, Ga., base hospital, from New Haven, Capt. H. W. NOWELL, *Boston*.

To Camp Grant, Ill., from Camp Sherman, Lieut. M. M. HAMBURG, Waltham.

To Camp Jackson, S. C., as orthopedic surgeon, from Walter Reed General Hospital, Lieut. E. P. RUGGLES, *Boston*.

To Camp MacArthur, Texas, base hospital, from Brockton, Capt. J. F. CALLAHAN, Brockton.

To Camp McClellan, Ala., as division psychiatrist, from Camp Gordon, Major G. E. McPHERSON, Harding. As orthopedic surgeon, from Syracuse, Lieut. K. JOHNSON, *Pittsfield*.

To Camp Wadsworth, S. C., from Camp Gordon, Capt. F. J. McKECHNIE, Springfield.

To Fort McPherson, Ga., from Fort Oglethorpe, Capt. H. J. FITZSIMMONS, Boston.

To Fort Oglethorpe, evacuation hospital, from Camp Shelby, Lieut. H. S. POMEROY, Peabody. *For instruction*, Lieut. H. F. DEARBORN, Lawrence.

To Hoboken, N. J., from New York, Capt. C. WHELAN, Hingham. Evacuation hospital, from Camp Devens, Lieut. W. K. TURNER, New Bedford.

To Otisville, N. Y., from Syracuse, Lieut. E. H. GANLEY, Methuen.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to his proper station*, from Camp Devens, Lieut. S. E. RYAN, Springfield.

To San Antonio, Texas, to examine drafted men for cardiovascular diseases, from Lakewood, Lieut. D. H. NISBET, Boston.

To Walter Reed General Hospital, D. C., from Baltimore, Capt. R. D. BELL, Somerville; from Camp Lee, Lieut. F. A. STEVENS, Boston.

The following orders have been revoked: *To Fort Oglethorpe* for instruction, Major F. H. VERHOEFF, Boston. *To Mays Landing, N. J.*, from Northeastern Department, Lieut. V. S. MERRITT, Springfield.

Michigan

To Camp A. A. Humphreys, Va., from Camp Crane, continued on *active duty for restricted service*, Lieut. C. F. DU BOIS, Detroit.

To Camp Abraham Eustis, Va., camp hospital, from Fort Oglethorpe, Capt. F. A. BOET, *Comstock* Park.

To Camp McClellan, Ala., base hospital, from Iowa City, Capt. W. S. BROWNELL, Detroit.

To Camp Sevier, S. C., from Camp Jackson, Lieut. R. N. RUEDEMANN, Ann Arbor. Base hospital, from Fort Oglethorpe, Capt. C. E. SIMPSON, Detroit.

To Camp Travis, Texas, from Fort Oglethorpe, Lieut. F. DWYER, Detroit.

To Detroit, Mich., from Camp Custer, Capt. R. T. URQUHART, Grand Rapids.

To Fort Oglethorpe for instruction, Major H. A. *HUME, Owosso*.

To San Antonio, Texas, Kelly Field, from Fort Wayne, Lieuts. W. F. COURIE, Detroit; E. D. HUNDERMAN, *Grand Rapids*.

Minnesota

To Camp Jackson, S. C., base hospital, for instruction, from Fort Oglethorpe, Capt. C. F. McNEVIN, St. Paul.

To Camp Meade, Md., base hospital, *for instruction*, from Camp Travis, Capt. J. A. GATES, Kenyon.

To Fort Totten, N. Y., from Camp Grant, Capt. *J. P. FREEMAN*, Glenville.

To San Antonio, Texas, Kelly Field, from Garden City, Lieut. F. L. POWERS, Pipestone. As tuberculosis examiner, from Camp Travis, *Lieut. M.* LEVY, *Granite* Falls.

To West Baden, Ind., from Camp Dodge, Capt. W. W. *LEWIS*, St. Paul.

Mississippi

To Camp Abraham Eustis, Va., from Fort Oglethorpe, Lieut. J. C. WHITE, Jr., Hazelhurst.

To Camp Greene, N. C., from Fort Oglethorpe, Lieut. W. M. BERRY, Jackson.

To San Antonio, Texas, Kelly Field, from Fort Wayne, Lieut. M. L. HOLLAND, Schlater.

To Walter Reed General Hospital, D. C., for instruction, from Camp Sevier, Lieut. K. T. KLEIN, Meridian.

Missouri

To Baltimore, Md., from Fort Riley, Lieut. G. W. HORROM, *Rolla*.

To Camp Beauregard, La., from Fort Sam Houston, Lieut. N. ZOGLIN, Kansas City.

To *Camp Crane, Pa.*, evacuation *hospital*, from *Camp Pike*, Capt. J. H. GROSS, St. Louis; *Lieut.* A. J. CAMPBELL, Sedalia.

To Camp Gordon, Ga., as camp psychiatrist, from Camp McClelland, Lieut. C. H. *BURDICK*, St. Louis.

To Camp Hancock, Ga., base hospital, from Camp Sheridan, *Lieut.* A. R. COHN, Kansas City.

To Camp Jackson, S. C., base *hospital*, *for* instruction, from Fort Oglethorpe, Capt. R. S. TILLES, Lieut. R. F. HYLAND, St. Louis.

To Camp McClellan, Ala., base hospital, from Fort Benjamin Harrison, Lieut. A. J. DECKER, Gray Ridge.

To Camp Shelby, Miss., base hospital, from Camp Jackson, Capt. F. L. BIGSBY, Kirksville.

To Camp Sherman, Ohio, base hospital, from New York, Capt. F. J. MOENNIGHOFF, Odessa.

To Camp Wadsworth, S. C., from Camp Kearney, Capt. L. A. KEMPFF, St. Louis.

To Fort Oglesthorpe, from Camp MacArthur, Lieut. L. E. DEAN, Maryville; from Camp Pike, Capt. A. S. HEITHAUS, St. Louis.

To Fort Riley for instruction, from Manhattan, Kan., Capt. F. M. O'KELLY, Carterville.

To Fort Snelling, Minn., from Azalea, N. C., Capt. P. G. PAUGH, St. Louis.

To Fort Warren, Mass., from Camp Devens, Lieut. C. S. STRATTON, Roscoe.

To Garden City, N. Y., as tuberculosis examiner, from Syracuse, Lieut. J. L. MARDER, St. Louis.

To Lakewood, N. J., from Walter Reed General Hospital, Lieut. C. M. SAMPSON, St. Joseph.

To New York, Bellevue Hospital, for *instruction, and on completion to his proper station,* from Camp Jackson, Lieut. S. W. FAIR, Belton.

To San Antonio, Texas, Kelly Field, from Fort Wayne, Capt. D. H. BOKHOF, West Line; from Wichita Falls, Lieut. C. C. COATS, Winston.

To West Baden, Ind., from Azalea, N. C., Lieut. A. W. KOESSEL, St. Louis.

Montana

To Camp Beauregard, La., from Fort Sill, Lieut. W. A. HULBUSH, Geraldine.

To Camp Crane, Pa., base hospital, from Camp Grant, Capt. E. W. THUERER, Billings.

To New Haven, Conn., Yale Army Laboratory *School, for instruction,* Lieut. A. B. ECKERDT, Great Falls.

To Rolling Prairie, Ind., Interlake School, to make physical examinations, and on completion *to Camp Custer, Mich.,* from Camp Dodge, Lieut. M. T. VORNHOLT, Antelope.

Nebraska

To Camp MacArthur, Texas, as tuberculosis examiner, from Camp Sherman, Capt. L. S. ROBINSON, Kearney.

To Camp McClellan, Ala., from Fort Riley, Lieut. H. H. THOMPSON, Talmage.

To Fort Benjamin Harrison, from Central Department, Lieut. L. C. HILSABEAK, Gretna.

To San Antonio, Texas, Kelly Field, from Austin, Texas, Lieut. C. L. HOUSEL, Ansley.

New Hampshire

To Camp Crane, Pa., evacuation hospital, from Camp Meade, Lieut. C. E. HIGHT, Groveton. Mobile hospital, from Camp Zachary Taylor, Capt. F. A. SPRAGUE, Concord.

To New York, Bellevue Hospital, for instruction, and on completion *to his proper station,* from Camp Devens, Lieut. E. L. CHAPMAN, Dover.

To West Baden, Ind., from Camp Wheeler, Major A. F. WHEAT, Manchester.

New Jersey

To Camp A. A. Humphreys, Va., as tuberculosis examiner, from Camp Devens, Lieut. S. R. FAIRCHILD, Penns Grove.

To Camp Crane, Pa., base hospital, from Hot Springs, Major E. B. ROGERS, Collingsv [illegible] from Fort Andrews, Capt. R. D. SCHIMMEL [illegible] Mobile Surgical Unit, *from* Fort Oglethorpe, Lieut. H. H. BOWLES, Summit.

To Camp Custer, Mich., from Fort Oglethorpe, Lieut. J. H. LOWREY, Newark.

To Camp Dodge, Iowa, base hospital, from Fort Oglethorpe, Lieut. B. M. HANCE, Boonton.

To Camp MacArthur, Texas, as tuberculosis examiner, from Camp Grant, Lieut. L. V. ROSENTHAL, Trenton.

To Camp Sevier, S. C., base hospital, from Fort Oglethorpe, Lieut. C. B. RUSSELL, Paterson.

To Camp Shelby, Miss., as tuberculosis examiner, from Camp Gordon, Lieut. S. BLAUGRUND, Trenton.

To Camp Travis, Texas, to examine the troops for cardiovascular diseases, from Lakewood, Capt. T. ALSOP, Atlantic City.

To Camp Wheeler, Ga., from New York, Capt. F. A. FINN, Jersey City.

To Camp Zachary Taylor, Ky., base hospital, from New York, Capt. N. W. CURRIE, Plainfield.

To New York, Bellevue Hospital, for instruction, and on completion *to his proper station,* from Camp Devens, Capt. W. J. DUCKETT, Jersey City.

To San Antonio, Texas, Kelly Field, from West Point, Miss., Capt. R. J. BEEBY, West Branch. As tuberculosis examiner, from Camp Custer, Lieut. W. H. HAINES, Audubon.

New Mexico

To Camp Crane, Pa., base hospital, from Camp Fremont, Lieut. H. D. SEWELL, Parkview.

To San Antonio, Texas, Kelly Field, from Middletown, Lieut. H. K. RIDDLE, Reserve.

New York

To Camp A. A. Humphreys, Va., from Fort Sill, Lieut. H. SHARP, New York.

To Camp Alfred Vail, N. J., from Camp Devens, Lieut. T. F. JUDGE, Troy.

To Camp Beauregard, La., base hospital, *from* Fort Oglethorpe, Capt. W. G. BOWERMAN, New York.

To Camp Crane, Pa., base hospital, from Camp Meade, Capt. J. J. COTTER, New York. Evacuation hospital, from Newport News, Lieut. R. COLP, New York. Surgical group, from Camp Meade, Lieut. J. F. BEIERMEISTER, Rochester.

To Camp Dick, Texas, from Houston, Capt. J. D. GULICK, Schenectady.

To Camp Dix, N. J., base hospital, from Lakewood, Lieut. A. M. MORGENLANDER, New York.

To Camp Gordon, Ga., base hospital, *from* Camp Wheeler, Capt. C. H. SANFORD, New York.

To Camp Greene, N. C., from Fort Oglethorpe, Lieut. C. E. CURTISS, Manlius; from Fort Porter, Capt. C. H. MACKEY, Lancaster. *To examine the troops* for cardiovascular diseases, from Fort Oglethorpe, Lieut. W. B. HUNTLEY, New York.

To Camp Jackson, S. C., base hospital, for instruction, from Fort Oglethorpe, Major F. T. ROBESON, New York; Lieut. M. R. BOOKMAN, New York.

To Camp MacArthur, Texas, as tuberculosis examiner, from Camp Sherman, Lieut. E. F. SAMPSON, New York. *To examine drafted men* for cardiovascular diseases, from Lakewood, Lieuts. L. A. BINGAMAN, R. WEST, New York.

To Camp McClellan, Ala., base hospital, from Fort Oglethorpe, Capt. H. E. MEEKER, New York; from Plattsburg Barracks, Capt. V. B. HAMLIN, Clinton; Lieut. M. E. FISHER, Delevan.

To Camp Pike, Ark., as orthorpedic surgeon, from Fort Oglethorpe, Lieut. L. P. HOOLE, Eastport.

To Camp Sevier, S. C., from Camp Jackson, Lieut. W. W. TRACEY, New York. Base hospital, from Fort Oglethorpe, Capt. C. A. LUBRECHT, Brooklyn; Lieut. S. L. SCIBETTA, Buffalo.

To Camp Shelby, Miss., as assistant sanitary inspector, from Fort Oglethorpe, Lieut. L. M. ROHR, Brooklyn. As tuberculosis examiner, from Camp Gordon, Lieut. L. B. BOYLAN, Woodhaven.

To Camp Upton, N. Y., base hospital, Lieut. W. F. C. STEINBUGLAR, Brooklyn.

To Camp Wadsworth, S. C., to examine the troops for cardiovascular diseases, from Lakewood, Lieut. A. T. MAYS, Brooklyn.

To Camp Zachary Taylor, Ky., base hospital, from New York, Lieut. A. S. UNGER, New York.

To Fort Hancock, N. J., from Army Medical School, Lieut. F. F. McGAULEY, Schenectady.

To Fort Oglethorpe, as instructor, from the Surgeon-General's Office, Major A. H. BUSBY, New York. For instruction, from duty as a private, Lieut. W. E. CAMPBELL, JR., New York.

To Fort Sill, Okla., Post Field, as flight surgeon, from Lonoke, Capt. D. H. WEBSTER, New Rochelle.

To Garden City, N. Y., as tuberculosis examiner, from Syracuse, Lieuts. J. J. RANDALL, Albany; F. C. BALDERREY, Ithaca.

To Hoboken, N. J., from Camp Upton, Major H. FOX, New York.

To Lakewood, N. J., for instruction, Lieut. S. E. MANDEVILLE, New York.

To Mineola, N. Y., Hazelhurst Field, for instruction, from Rockefeller Institute, Capt. A. L. MEYER, New York.

To New Haven, Conn., Yale Army Laboratory School, from Rockefeller Institute, Major C. G. BULL, New York.

To Newport News, Va., from Fort Oglethorpe, Capt. J. G. HOWARD, South Ozone Park.

To New York, Bellevue Hospital, for instruction, and on completion *to his proper station,* from Camp Dix, Lieut. J. M. SCHAFFER, New York; from Camp Upton, and on completion *to his proper station,* Lieut. S. HIRSCH, New York.

To Otisville, N. Y., from New Haven, Capt. H. JUDKOWITZ, Brooklyn; from Syracuse, Capt. C. B. BAKER, Kingston.

To Panama Canal Zone, from New Haven, Capt. E. C. GOW, Schuylerville.

To Rochester, N. Y., to examine enlisted men, Lieut. W. B. JONES, Rochester.

To Rockefeller Institute for *instruction in the treatment of infected* wounds, and on completion *to their proper stations,* from Camp Devens, Capt. C. R. MARSH, Oneonta; Lieut. W. G. HALLSTEAD, Flushing; from Camp Upton, Capt. S. T. BARTON, Canastota.

To San Antonio, Texas, Kelly Field, from Garden City, Lieut. M. GROLLMAN, Brooklyn; from Middletown, Capt. W. L. LAING, Brooklyn.

To Walter Reed General Hospital, D. C., from Baltimore, Major R. A. KINSELLA, New York.

To Washington, D. C., from Rockefeller Institute, Lieut. F. L. GATES, New York. For conference and on completion *to Hicks, Texas,* Taliaferro Field, as flight surgeon, from Mineola, Capt. G. M. CLOWE, Schenectady. Surgeon-General's Office Major J. H. TELFAIR, New York.

The following order has been revoked: *To Camp Wadsworth, S. C.,* from Washington, Major H. R. GAYLORD, Buffalo.

North Carolina

The following order has been revoked: *To Camp Hancock, Ga.,* base hospital, from Fort Oglethorpe, Capt. R. F. YARBOROUGH, Louisburg.

North Dakota

To Camp Devens, Mass., base hospital, from New York, Lieut. J. B. TYRELL, Underwood.

To West Baden, Ind., for instruction, from Camp Grant, Lieut. A. J. KAESS, Fargo.

Ohio

To Camp Abraham Eustis, Va., from Fort Oglethorpe, Lieut. A. N. VANDEMAN, Bellbrook.

To Camp Crane, Pa., as *tuberculosis examiner, from* Syracuse, Capt. A. FALLER, Cincinnati. Evacuation hospital, from New York, Capt. M. E. BLAHD, Cleveland.

To Camp Jackson, S. C., base hospital, for instruction, from Fort Oglethorpe, Capt. D. W. PALMER, Cincinnati.

To Camp McClellan, Ala., base hospital, *from* Fort Benjamin Harrison, Lieut. J. S. HUNTER, Jackson.

To Camp Wadsworth, S. C., for instruction, Lieut. H. D. FOWLER, Cleveland.

To Camp Zachary Taylor, Ky., from West Point, Ky., Major H. J. WARE, Cincinnati.

To Cape May, N. Y., from New York, Capt. B. B. NEWBAUBER, Cleveland.

To Fort Oglethorpe for instruction, Capt. C. LOUY, Toledo.

To Fort Ontario, N. Y., from Fort Oglethorpe, Lieut. W. A. KOCH, Bucyrus.

To New Haven, Conn., from Walter Reed General Hospital, Capt. J. T. MERWIN, Athens.

To New York, Bellevue Hospital, for instruction, and on completion *to their proper stations,* from Camp Sherman, Capt. J. K. TRESSEL, Alliance; Lieut. C. G. McPHERSON, Xenia; from Camp Upton, Lieut. J. B. SAMPSELL, Van Wert; *from* Camp Zachary Taylor, Capt. P. F. KING, Alliance.

To San Antonio, Texas, Kelly Field, from Fort Wayne, Lieuts. H. L. MECKSTROTH, Dayton; W. H. BENNER, Tiffin; F. A. COBB, Toledo; from Garden City, Lieuts. C. H. VEROVITZ, Cleveland; F. E. HALL, Springfield; from West Point, Miss., Lieut. J. M. PUMPHREY, Mount Vernon.

To Walter Reed General Hospital, D. C., from Fort Oglethorpe, Lieut. W. I. JENKINS, Cincinnati.

Oklahoma

To Camp Upton, N. Y., base hospital, from New York, Lieut. R. I. ALLEN, Nowata.

To Hoboken, N. J., evacuation hospital, *from Camp Meade,* Capt. J. H WHITE, Muskogee

Oregon

To Fort Oglethorpe for instruction, from New York, Lieut. G. N. PEASE, Portland.

Pennsylvania

To Camp Abraham Eustis, Va., from Fort Oglethorpe, Lieuts. M. A. BARBOUHR, Johnstown; W. C. DIESS, Sharpsburg.

To Camp Crane, Pa., evacuation hospital, *from* Camp Greene, Lieut. J. H. HARTWELL, Philadelphia; from Camp Meade, Lieut. F. C. CARR, Swarthmore. Mobile surgical unit, from Fort Oglethorpe, Capt. C. A. HILL, Pittsburgh.

To Camp McClellan, Ala., base hospital, from Camp Crane, Lieut. H. I. NEWCOMET, Reading.

To Camp Sherman, Ohio, base hospital, from New York, Capt. T. A. STEELE, McKeesport.

To Camp Wheeler, Ga., base hospital, Lieut. H. B. ANDERSON, Philadelphia.

To Camp May, N. J., from Fort Oglethorpe, Lieut. W. S. REESE, Scranton.

To Fort Benjamin Harrison, from Camp Crane, Lieut. R. Z. COPE, Telford; from Camp Grant, Lieut. A. H. MOORE, Philadelphia.

To Fort McHenry, Md., from New York, Lieut. A. B. HAMILTON, Freeland.

To Fort Niagara, N. Y., Capt. J. H. W. ANDERSON, Pittsburgh.

To Fort Oglethorpe, from Camp Pike, Lieut. G. D. SCHOONMAKER, Philadelphia. As instructor, from Lakewood, Major J. McFARLAND, Philadelphia. For instruction, from Washington, Lieut. R. NEBINGER, Danville.

To Garden City, N. Y., as tuberculosis examiners, from Syracuse, Capts. J. S. CRAWFORD, Pittsburgh; C. M. MALONE, Shamokin.

To Lakewood, N. J., from the Surgeon-General's Office, Major, R. PEMBERTON, Philadelphia.

To Lawrenceville, N. J., from Camp Dix, Capt. O. A. JONES, Sharon.

To New Haven, Conn., Yale Army Laboratory School, *for instruction,* Lieut. H. F. BAKER, Philadelphia.

To New York, from Camp Upton, Capt. A. W. SHERRILL, Pittsburgh.

To Richmond, Va., from Fort Oglethorpe, Major D. H. BERGEY, Philadelphia.

To San Antonio, Texas, Kelly Field, *from* Camp Dick, Capt. W. S. SHIMER, Philadelphia; from Garden City, Capt. W. L. SCOTT, Joffre; from Middletown, Pa., Lieut. P. G. ATKINSON, Pittsburgh.

To San Diego, Calif., Rockwell Field, as flight surgeon, from Fort Sill, Major J. H. McKEE, Philadelphia.

To Schenectady, N. Y., from Lakewood, Lieut. W. N. JOHNSON, Philadelphia.

To Walter Reed General Hospital, D. C., for instruction, and on completion *to Fort Des Moines, Iowa,* from Fort Oglethorpe, Lieut. F. L. MORROW, Braddock.

To Washington, D. C., for conference, and on completion *to Hicks, Texas,* Taliaferro Field, for conference, and on completion *to Houston, Texas,* Ellington Field, as flight surgeon, from Mineola, Capt. C. WILLIAMS, Philadelphia. On completion *to San Antonio, Texas,* Brooks Field, as flight surgeon, from Mineola, Lieut. J. FLEITAS, Philadelphia.

To West Point, Ky., from Camp Zachary Taylor, Lieut. H. A. D. BAER, Abington.

Philippine Islands

To Washington, D. C., for instruction, from Philippine Department, Major C. L. BEAVEN

Rhode Island

To West Baden, Ind., from Camp Hancock, Lieut. J. F. KENNEY, Pawtucket.

South Carolina

To Camp Sevier, S. C., base hospital, from Fort Oglethorpe, Lieut. G. H. WALTER, Orangeburg.

To Fort Benjamin Harrison, from Camp Crane, Lieut. A. S. BEHLING, St. George.

To Fort Howard, Md., from Fort Riley, Lieut. L. F. ROBINSON, Pickens.

To Fort Oglethorpe, evacuation hospital, from Camp Wadsworth, Major C. B. EARLE, Greenville.

To Newport News, Va., from Camp Morrison, Lieut. R. M. FULLER, McCormick.

The following order has been revoked: *To Madison Barracks, N. Y.,* from Fort Oglethorpe, *Capt.* M. CROOK, Spartanburg.

South Dakota

To Mineola, N. Y., Hazelhurst Field, for instruction, from Camp Shelby, Lieut. F. I. PUTMAN, Sioux Falls.

To Newport News, Va., from Camp Morrison, Capt. W. F. BUSHNELL, Elk Point.

Tennessee

To Camp Alfred Vail, N. J., from Indianapolis, Lieut. W. T. BUCK, Henderson.

To Camp Jackson, S. C., base hospital, for instruction, from Fort Oglethorpe, Capt. E. D. MITCHELL, Memphis.

To Camp Sevier, S. C., base hospital, from Fort Oglethorpe, Lieut. E. E. MILLER, Nashville.

To Camp Shelby, Miss., from Fort Oglethorpe, Capt. J. H. McCALL, Huntington.

To Camp Wadsworth, S. C., from Camp Shelby, Lieut. H. D. MILLER, Johnson City.

To New Haven, Conn., Yale Army Laboratory School, for instruction, from Camp Joseph E. Johnston, Lieut. G. T. WILHELM, Decatur.

To San Antonio, Texas, Kelly Field, as tuberculosis examiner, from Camp Custer, Lieut. E. C. SEALE, Nashville.

To Washington, D. C., from Camp Leach, Capt. L. A. STONE, Memphis.

Texas

To Camp Bowie, Texas, from Fort Oglethorpe, Lieut. G. C. FOX, Tell.

To Camp Colt, Pa., as camp sanitary inspector, from Fort Oglethorpe, Lieut. O. H. TALLEY, El Paso.

To Camp Dix, N. J., base hospital, from New York, Lieut. H. E. HOKE, Waco.

To Camp Hancock, Ga., as tuberculosis examiner, from New Haven, Major I. S. KAHN, San Antonio.

To Camp Jackson, S. C., base hospital, for instruction, from Fort Oglethorpe, Capt. F. P. HERFF, San Antonio.

To Camp MacArthur, Texas, base hospital, from Fort Oglethorpe, Capt. C. E. DURHAM, Hico.

To Camp Sherman, Ohio, as assistant sanitary inspector, from Fort Oglethorpe, Lieut. J. E. KING, Throckmorton. Base hospital, from New York, Lieut. E. D. RICE, Tyler.

To Corpus Christi, Texas, from Camp Cody, Capt. E. H. IRVIN, El Paso.

To Fargo, N. D., North Dakota Agricultural College, from Fort Riley, Lieut. A. L. JONES, Weatherford.

To Fort Sam Houston, base hospital, *for observation and treatment,* from Corpus Christi, Lieut. F. A. ALLIN, San Antonio.

To San Antonio, Texas, Kelly Field, from Dallas, Texas, Lieut. J. A. McCONNELL, Poolville; from Dayton, Ohio, Lieut. F. B. KING, Durango; from Hicks, Texas, Capt. H. CALDWELL, Corpus Christi.

To Washington, D. C., from Camp Logan, Lieut.-Col. C. M. WALSON.

Utah

To Camp Shelby, Miss., from St. Louis, Capt. A. A. BIRD, Magna.

Vermont

To Camp A. A. Humphreys, Va., to examine the command for nervous and mental diseases, from Plattsburg Barracks, Capt. S. L. GOODRICH, Waterbury.

To Camp Jackson, S. C., as orthopedic surgeon, from Walter Reed General Hospital, Lieut. B. E. WHITE, Brattleboro.

To Camp Knox, Ky., from Camp Sherman, Lieut. R. D. WORDEN, Montgomery Center.

To Mays Landing, N. J., from Northeastern Department, Lieut. H. L. TILLOTSON, Groton.

To San Antonio, Texas, Kelly Field, from Garden City, Lieut. R. H. BURKE, *St. Johnsburg.*

Virginia

To Camp Dodge, Iowa, as orthopedic surgeon, from Camp A. A. Humphreys, Lieut. R. M. BAKER, Edgehill.

To Camp Jackson, S. C., base hospital, for instruction, from Newport News, Capt. J. T. BUXTON, Newport News.

To Camp Shelby, Miss., as tuberculosis examiner, from Camp Zachary Taylor, Lieut. *W. B. McILWAINE, III, Petersburg.*

To San Antonio, Texas, Kelly Field, from Arcadia, Fla., Capt. B. BARROW, Barrow's Store.

The following order has been revoked: *To Camp Hancock, Ga.,* base hospital, from Fort Oglethorpe, Capt. C. T. PIERCE, Litwalton.

Washington

To Camp Crane, Pa., evacuation *hospital, from Fort Riley,* Lieut. H. H. SKINNER, North Yakima. Mobile hospital, from Army Medical School, Lieut. L. S. DEWEY, Okanogan.

West Virginia

To Camp Greene, N. C., from Fort Oglethorpe, Lieut. L. J. LANICH, Coketon.

To Camp Sheridan, Ala., to examine drafted men for cardiovascular diseases, from Lakewood, Lieut. L. E. STUBBS, Gloucester.

To Camp Wadsworth, S. C., from Camp Sevier, Lieut. *C. E. PEERY,* War.

To Detroit, Mich., from Camp Greene, Major H. D. HATFIELD, Huntington.

To Fort Oglethorpe, evacuation hospital, from Camp McClellan, Capt. E. B. WRIGHT, Richmond. For instruction, Lieut. R. H. WALKER, Charleston.

To Hamilton, N. Y., Colgate University, from Columbus, Lieut. I. R. LeSAGE, Huntington.

To Mineola, N. Y., Hazelhurst Field, *for* instruction, from Camp Wheeler, Lieut. W. A. NOBLE, Welch.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Devens, Mass.,* base hospital, Capt. H. H. CARR, Fairmont.

Wisconsin

To Camp Crane, Pa., evacuation hospital, from Camp Grant, Capt. P. A. FOX, Milwaukee.

To Camp Jackson, S. C., base hospital, from New Haven, Lieut. U. J. DURNER, Milwaukee.

To Camp Zachary Taylor, Ky., base hospital, from New York, Lieut. W. C. DARLING, Milwaukee.

To Carlisle, Pa., from Camp Crane, Capt. W. HECKER, Beloit.

To Detroit, Mich., from Camp Custer, Lieut. S. J. SEEGER, Milwaukee.

To New York, Bellevue Hospital, for instruction, and on completion to his proper station, from Camp Sherman, Lieut. W. J. WINNEMANN, Athens.

To San Antonio, Texas, as tuberculosis examiner, *from* Camp Dodge, Capt. C. H. MEYST, Burlington.

To Washington, D. C., from Camp Meade, Major J. R. McDILL, Milwaukee.

To Willoughby, Ohio, from Fort Oglethorpe, Lieut. R. M. CAMPBELL, Milwaukee.

The following order has been revoked: *To Camp Gordon, Ga.,* base hospital, from Army Medical School, Capt. F. A. McJUNKIN, Milwaukee.

Wyoming

To San Antonio, Texas, Kelly Field, *from* Wichita Falls, Texas, Lieut. J. T. McBRIDE, Dayton.

ORDERS TO OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Sen. Surg. J. H. WHITE, relieved from duty at the Marine Hospital, Memphis, Tenn. Directed to proceed to Washington, D. C., for duty with the U. S. Army.

Surg. W. C. BILLINGS, proceed to San Diego, Calif., to investigate the public health value of contemplated improvement.

Surg. E. A. SWEET, proceed to Cheyenne, Wyo., to assist in administration in influenza control measures.

Surg. W. H. FROST, directed to undertake epidemiological studies in regard to the recent epidemic of influenza, with headquarters at Washington, D. C.

Passed Asst. Surg. EMIL KRULISH, proceed to Alaska for duty in the suppression of influenza.

Asst. Surg. R. R. SAYERS, proceed to Brunswick, Ga., to investigate sanitary conditions at the Government Picric Acid plant at that place.

Asst. Surg. R. I. DESAUSSURE, proceed to Charleston, W. Va., for inspection of methods employed in combating influenza. Relieved from duty in connection with the suppression of influenza. Proceed to Columbia, S. C., for duty in extracantonment sanitation.

Asst. Surg. C. P. ESKEY, proceed to Montgomery, Ala., for duty in extracantonment sanitation.

Asst. Surg. CHARLES ARMSTRONG, report to the director, hygienic laboratory, for duty in investigations in regard to the prevention, etiology and treatment of influenza.

Asst. Surg. THOMAS FARRAN, Jr., proceed to Washington, D. C., and New York City for conference in regard to medical and sanitary work at Muscle Shoals, Ala.

Prof. E. B. PHELPS, proceed to Penniman, Va., to supervise investigations of T. N. T. poisoning.

Prof. CARL VOEGTLIN, proceed to Penniman, Va., to supervise investigations of T. N. T. poisoning.

Phar. G. I. VAN NESS, Jr., relieved at Honolulu, Hawaii. Proceed to Boston Quarantine Station, Gallops Island, Mass.

Acting Asst. Surg. H. N. COLE, address the annual state conference on venereal disease control at Chillicothe, Ohio, Nov. 24-26.

Acting Asst. Surg. G. J. LONGSTREET, proceed to the Boston Quarantine Station for duty in investigations of influenza.

Acting Asst. Surg. A. H. PILLSBURY, proceed to necessary points in the states of Maine, New Hampshire, Vermont, Rhode Island and Connecticut in conection with instructions to drafted men to be carried out under Service supervision.

Acting Asst. Surg. J. E. YOUNG, relieved from duty in the suppression of influenza and the control of trachoma, proceed to Florence, Ala., for duty in the Muscle Shoals sanitary district.

Consulting Engr. C. N. SAVILLE, proceed to Newport, R. I., via Providence to investigate and advise in regard to the increase of the public water supply of that city.

Regional Field Director LESTER FEISTEL, proceed to necessary points in the states of Arizona, Utah, Nevada and California in connection with instructions to drafted men, to be carried out under Service supervision.

Regional Field Director H. G. SPAULDING, proceed to necessary points in the states of Nebraska, Kansas, Oklahoma, Texas and Arkansas in connection with instructions to drafted men, to be carried out under Service supervision.

Physiological Chemist J. M. JOHNSON, proceed to Penniman, Va., for duty in investigations of T. N. T. poisoning.

Asst. Chemist, E. J. CASSELMAN, proceed to Penniman, Va., for duty in investigations of T. N. T. poisoning.

Scientific Asst. M. A. CONNELL, proceed to Penniman, Va., for duty in investigations of T. N. T. poisoning.

Scientific Asst. M. M. CRANE, proceed to Penniman, Va., for duty in investigations of T. N. T. poisoning.

Statistician E. L. SYDENSTRICKER, proceed to Baltimore, Md., and other places to collect data relative to the epidemiology of influenza.

Bact. G. J. PFAU, proceed to Brunswick, Ga., for duty in laboratory investigations of malaria and other diseases at the Government Picric Acid Plant.

Scientific Asst. ELLA C. BOYER, proceed to necessary points in the field for investigations of industrial fatigue.

San. Inspector R. C. SIMPSON, relieved at Newport News, Va., proceed to Petersburg, Va., for duty in extracantonment sanitation.

Microscopist MARY RAYMOND, proceed to Brunswick, Ga., for duty in laboratory investigations of malaria and other diseases at the Government Picric Acid Plant.

Microscopist MILDRED STINGLEY, proceed to Brunswick, Ga., for duty in laboratory investigations of malaria and other diseases at the Government Picric Acid Plant.

Resignation of Assistant Surgeon LYNNE A. FULLERTON accepted by the President, to be effective Oct. 31, 1918.

Occupational Disease as Distinguished from Industrial Accident.—The Ohio Supreme Court in a recent decision made the following distinction between an occupational disease and an industrial accident, which, as the *Ohio State Medical Journal* for April says, will be of interest to those engaged in the industrial side of public health work. The court says: "A disease contracted in the natural and ordinary course of employment, by a person engaged in a particular calling or occupation, which disease from common experience is known to be a usual and customary incident to such calling or occupation, is an 'occupational disease,' and not within the contemplation of the workmen's compensation law." It is also said with reference to a particular case: "The accidental and unforeseen inhaling by an employee, in the course of his employment, of a specific volatile poison or gas, resulting in injury or death, is not an occupational disease."

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest; such as relate to society activities, new hospitals, education, public health, etc.)

CALIFORNIA

Upholds Ordinance Regarding Closing.—The supreme court of the state has upheld the validity of an ordinance of the city of Los Angeles prohibiting public gatherings during the epidemic of influenza. The court denied a writ of habeas corpus in the case of five citizens of Los Angeles who, in defiance of the prohibiting ordinance, were arrested for holding a service in the Christian science church. The constitutionality of the health ordinance was attacked.

ILLINOIS

Restrained from Halting Hospital Work.—In the superior court, November 9, Judge Foell issued a temporary injunction restraining the village of Broadview from interfering with the construction of a hospital which is being erected at Speedway Park.

Illegal Practitioners Arrested.—Milton Chaiken of Joliet, who was recently arrested by the Department of Registration and Education of the State of Illinois and fined $75 and costs for violating the Medical Practice Act, was again arraigned in court and fined $50 and costs on each of six counts. Chaiken was employed in the office of a so-called advertising physician in Joliet. When the physician was out of the office Chaiken would diagnose cases and write prescriptions, signing the name of the physician to them.——Julia Badurak, also of Joliet, was arrested by the department and fined $100 and costs for practicing medicine without a license.

Campaign in Illinois for Tuberculosis Sanatoriums Successful.—In the election held November 5, thirty-three of the 102 counties in Illinois voted affirmatively on the levy of a county tax of 3 mills or less for the construction of tuberculosis hospitals and the establishment of nursing, clinic and dispensary service in each county. The campaign plan prepared by the Illinois Tuberculosis Association provided for widespread publicity and personal contact by local workers with the families of the various counties. The general direction of the campaign was in the hands of Walter B. Thurber, executive secretary of the Illinois Tuberculosis Association, and a staff of three field workers and the chairman of each county committee made up the board directing the campaign. This election gives Illinois a total of forty such institutions as compared to none two years ago.

Chicago

Influenza and Pneumonia Deaths.—The combined reports of influenza and pneumonia in Chicago for the months of September and October, covering the wave of influenza, show that there were 7,930 deaths.

Personal.—Dr. Truman W. Brophy has returned after three months spent in the treatment of facial and head wounds in France.——Dr. Gerhardt E. Wyneken resigned from the faculty of Loyola University, October 4.——Dr. Willis O. Nance, who has been a member of the city council for eight years and for seven years has been chairman of the council committee on public health, was elected trustee of the Sanitary District of Chicago, at the recent election.——Dr. Franklin A. Weatherford, while making a professional call, October 24, suffered a cerebral hemorrhage and is seriously ill at the Englewood Hospital.

INDIANA

Provision for Returned Tuberculous Soldiers.—According to a statement by M. E. Foley, chairman of the state council of defense, only 370 beds have been provided in the entire state for returned tuberculous soldiers, and more than 90 per cent. of the counties of the state have made no provision for the care of such men.

Personal.—Dr. J. Clifford Wallace has been appointed deputy health officer of Fort Wayne.——Dr. Eric A. Crull, city health commissioner of Fort Wayne, has resigned to enter the military service.——Dr. Lindley H. Eshleman, Marion, is reported to be seriously ill with an infection of the leg.——Dr. Henry W. Greist, Monticello, has been appointed health commissioner of White County, to succeed Dr. Alfred C. Williams, Reynolds, who has resigned to enter the military service.——Dr. Charles P. Cook, New Albany, is said to be critically ill with pneumonia.

Camp Faces Crisis.—Boehne Camp, the tuberculosis sanatorium of Vanderburg County, is facing a critical financial situation. Unless $25,000 is raised for the support of the camp, the institution will be forced to close. The cost of maintaining the hospital until January 1 will be $13,000, including the payment of back debts and general running expenses. The barracks, now nearly completed, which will accommodate from fifty to sixty soldiers cannot be opened until a mess hall and kitchen have been erected to care for the needs of these men. The influenza epidemic is believed to have increased the predisposition toward tuberculosis. These three factors unite in making the situation urgent.

Reappearance of Influenza.—On November 18 the Indianapolis Board of Health issued an order providing for the universal wearing of cloth masks in all public places in the city and the closing of the public schools. This action was taken on account of the very serious recrudescence of epidemic influenza in the city, and on account of its apparent reappearance in various communities throughout the state. The situation in Indianapolis is described as being as serious as at any time during the epidemic, and in addition to the closing of the schools and the order requiring masks, which was to be in full force by November 20, the matter of again closing theaters and other places of public gathering, including the churches, was under advisement. City Health Officer Dr. H. G. Morgan attributes the new accession of the disease to carelessness of the people during the recent war celebrations. Reports received at the office of the state board of health show that the disease is also spreading throughout the state. Thirty-eight counties reported 1,439 new cases for the week end. Green County reported 135 new cases, Vigo 158, Cass 77, Decatur 60, Grant 63, Jasper 70, Laport 65, Clay 66 and Switzerland 54. Among the places reporting a more serious condition with regard to influenza are Frankfort, with 46 new cases, November 18; Columbus with 30; Rockville, where it is said there were more cases than at any time during the epidemic, and Alexandria, Brazil, Shelbyville, Seymour and Huntington.

MARYLAND

Board Meeting to Be Omitted.—Owing to general conditions and the limited number of inquiries concerning the December examination for licensure, the Board of Medical Examiners of Maryland announces that it has determined to omit the usual December meeting.

Government to Study Influenza Here.—Dr. Wade H. Frost and a staff of assistants from the United States Public Health Service visited Baltimore during the past week for the purpose of studying the recent epidemic of Spanish influenza in the city and state. They were given access to the records of the state department of health and the city health department.

Personal.—Dr. Daniel Z. Dunott, Baltimore, has been named chairman of the Committee on Health and Medical Relief of the United States Railroad Administration, which work includes all railroads in this country.——Dr. Ralph B. Seem, acting superintendent of Johns Hopkins Hospital, Baltimore, sustained a severe wrench of the shoulder, and Dr. Benjamin R. Benson, Cockeysville, suffered contusions in a collision between automobiles near Cockeysville, October 28.

MASSACHUSETTS

Hospital Items.—It is announced in the Boston papers that papers are about to be signed under which the Parker Hill Hospital property, controlled by the Women's Charity Club and the Massachusetts Women's Hospital Corporation, will be transferred to the government. This building with seventy-five beds will be used for headquarters for nurses, especially those who work in the Robert Bent Brigham and Elks hospitals.——Edward S. Searles, Methuen, has offered to build a hospital near Lawrence for the treatment of patients residing in Lawrence, Methuen and Andover.

NEW YORK

Planning Venereal Disease Hospital for Syracuse.—At the suggestion of Dr. David M. Totman, health officer of Syracuse, the mayor of that city, after a conference with a number of prominent citizens, has appointed a committee to choose a building that can be converted into an isolation hospital for cases of venereal disease.

Personal.—Dr. John W. LeSeur has been appointed acting health officer of Batavia in the place of Dr. Victor M. Rice, who has accepted a captain's commission in the United States Army.——Dr. John A. Wyeth is confined to his bed in the Polyclinic Hospital with a broken ankle, caused by slipping and falling on a polished floor.

New York City

Hospital Transferred.—The trustees of the New York Polyclinic Hospital have proposed to transfer the property of that institution to the Columbia University to be maintained for the public, and for advanced instruction and research in medicine and surgery. The hospital was built in 1912, and has a capacity for 300 patients.

Lecture on Pasteur.—Dr. Etienne Burnet of the Pasteur Institute, Paris, surgeon in the French army and member of the Mission of French Scholars to the United States, delivered a lecture at the New York Academy of Medicine in cooperation with Columbia University, November 15, on "Pasteur as a Representative of the French Scientific Spirit."

Red Cross Gifts.—The Atlantic Division of the Red Cross will receive $1,000,000 from the estate of James A. Schrymser. This is said to be the largest single bequest the organization has ever received.——The employees of the supply department of the Brooklyn Navy Yard have raised money for a fully equipped ambulance for overseas service, which they have turned over to the American Red Cross.

The Influenza Toll in New York.—An announcement from the health department, November 16, states that although new cases of influenza continue to be reported the epidemic is practically over in this city. From the beginning of the outbreak until November 16, 128,558 cases have been reported and 19,091 cases of pneumonia, with 20,086 deaths from the two causes. It is estimated that in the Bronx there were 40,000 cases, while only 18,000 were reported.

Dinner to Bastianelli.—The Italian Medical Society of New York City recently gave a dinner to Lieut.-Col. Bastianelli of the Italian army. Dr. Carmelo Atonna, president of the society, in his introductory remarks, suggested that Colonel Bastianelli should do all in his power in Rome to bring about an interchange of medical professors between the United States and Italy, and in his reply Dr. Bastianelli agreed to this and urged the Italian medical fraternity of New York to unite in an effort to form a real Italian medical center.

Plan Great Chemical Institute.—At a recent meeting of the New York branch of the American Chemical Society held at the Chemists' Club, resolutions were passed proposing the organization of an American Chemical Institute under the auspices of the American Chemical Society, whose special function shall be to promote research with a view to the introduction of new or improved medicinal products, so as to make the United States free of any future effort to control this field by German manufacturers. In the discussion of the resolution Dr. Phoebus A. Levene of the Rockefeller Institute gave the project his earnest support.

Harvey Society Meeting.—At the annual meeting of the Harvey Society held in September, the following officers were elected: president, Dr. Graham Lusk; vice president, Dr. Rufus J. Cole; secretary, Dr. Karl M. Vogel, and treasurer, Dr. F. H. Pike. It was decided that the lectures to be given this winter should not exceed six, and that the lectures of last winter and this winter be given in one course, the members to be charged with dues for one year only to cover the dues of activity. The two lectures which had been arranged to be held, one by Dr. Stewart Paton, Princeton, N. J., on "The Psychology of the Aviator," and the other by Dr. Alonzo E. Taylor, Philadelphia, on "The World's Food Situation," have been postponed on account of the departure of the lecturers for Europe. The following lectures have, however, been provisionally arranged:

Jan. 11—Col. Eugene R. Whitemore, Infectious Diseases in the Army.
Jan. 25—Dr. R. N. Yerkes, Psychological Examination of the Soldier.
Feb. 8—Dr. Yandell Henderson, Physiology of the Aviator.
March 1—Dr. Frederic S. Lee, Industrial Fatigue.
March 15—Col. F. P. Underhill, War Gases.

OHIO

Personal.—Dr. Fletcher Langdon, Cincinnati, has been appointed bacteriologist of the Cincinnati Board of Health, to succeed Dr. Philip H. Dorger, who has been ordered to report to Yale University for training in the Medical Reserve Corps.

Follow-Up Work on Tuberculosis.—Up to November 1, discharges of soldiers for tuberculosis reported to the state authorities amounted to 865. Of these, there were only 125 recorded to the state department of health as not found. The others have been referred to local public health nurses, reached by letters or visited by nurses from the state department of health. Of the Ohio soldiers discharged on account of tuberculosis, thirty-one have been placed in hospitals.

Reorganization of Local Health Machinery.—The state board of health is formulating plans for the reorganization of the local health administrative system. The chief defects are the lack of trained men in the local health administrative work and the absence of control over local health officials by the state department of health. The proposed plans call for the grouping of the 2,200 health districts of the state into larger units, able to support efficient local health organizations. The coming of peace will aid by releasing for public health work many men who have received training in sanitary work of the Army.

Recrudescence of Influenza.—A bulletin of the state department of health, November 16, says that in some communities of the state, following the permission of the state board to local health officers to determine when the influenza ban should be lifted, premature action resulted in a recrudescence of the disease. In some districts the ban was lifted in cities and towns when the disease was still prevalent in rural surrounding territory, with the result that the country people came to town to attend movies and other public places, again scattering the infection. The general situation with regard to influenza, however, was much improved, and United States Public Health Service physicians sent into the state to help out are being rapidly released.

PENNSYLVANIA

Personal.—Dr. Glenn M. Pierce, McKeesport, who has been confined to his bed for four weeks with influenza and pneumonia, is reported to be convalescent.

Quarantine Lifted.—The quarantine for epidemic influenza was almost entirely lifted from the state, November 9, the only exceptions being a few counties in which conditions have not improved. Among the exceptions are Blossburg, Scottdale, Jeannette, Monessen and Vandegrift, Carnegie, Oakdale, Calamity, Unity Mills, Forest County, Newport, Perry County, Muncy, Renovo, Bitumen, Snowshoe, Sandy Ridge, Hyndman, Broad Top, Liberty, Osceola Mills, Three Springs, Robertsdale, Forest City, Dunmore and Arnot counties.

Bucks County Medical Society.—The Bucks County Medical Society held its annual session, November 13, at Monument House, Doylestown. Dr. B. Franklin Royer, acting commissioner of health, was a guest of honor. The following officers were elected: president, Dr. Isaac S. Plymire, Doylestown; vice presidents, Dr. William F. Weisel, Quakertown, and Dr. James Collins, Bristol; secretary-treasurer, Dr. Anthony F. Meyers, Blooming Glen; censors, Dr. George M. Grim, Ottsville; Dr. William R. Cooper, Point Pleasant, and Dr. Howard Pursell, Bristol.

Philadelphia

Influenza Declining.—During the week ending November 8, there were 375 deaths from influenza and pneumonia, 218 from the former and 157 from the latter. The total fatalities for the week were 802, as compared with 1,771 the previous week and more than 5,000 at the height of the epidemic.

Hospital Bequests.—The Episcopal Hospital eventually will receive $5,000 from the estate of Mrs. E. C. Swartz, to endow two beds, one for men and the other for women "engaged in or connected with the publishing, printing or writing for newspapers in Philadelphia, as a memorial to my late husband, Edward J. Swartz," former editor-in-chief of the *Evening Telegraph*.

Hospital Taken by United States.—Hahnemann Hospital, having been taken over by the government, has been made central receiving and examining station for medical student applicants who desire to go to the officers' training camps. Col. John A. Lockwood is in charge of the work at the hospital, which is to be devoted entirely to obtaining officers for the Medical Corps, although those selecting infantry, machine gun or artillery will be examined and, if qualified, sent to camps devoted to those branches.

Epidemic Orphans to Be Cared For.—A preliminary conference of representatives of various aid organizations met in the office of Director Krusen to plan for the care of children made orphans by the death of their parents during the recent epidemic of influenza. The organizationss represented were the Emergency Aid Committee, the National Congress of Mothers, the Division of Child Hygiene, Department of Public Works, the Social Service Department, Philadelphia General Hospital and the Children's Aid Society. It was decided to make an appeal to the public for subscriptions for a fund of $50,000 for their care and maintenance.

Campaign for Pennsylvania Hospital.—The Pennsylvania Hospital's drive to raise $1,000,000 to enlarge its equipment began the first week in November. Nearly 30,000 letters have been sent out, stating the needs of the hospital and telling of its accomplishments since its establishment, 167 years ago. According to the report of the board of managers, there was a deficit of $116,000 last year and this year it threatens to be greater. In the last year more than 50,000 patients were treated at the Pine Street department, the majority of whom paid nothing. Since the branch for nervous and mental diseases was opened in West Philadelphia, more than 19,000 cases have been treated, 7,000 being restored to normal. The expense of the charity department last year reached $174,000 and of the mental department, $142,000.

Personal.—Dr. J. H. Mason Knox, Baltimore, assistant director, children's bureau. American Red Cross in France, addressed the Philadelphia County Medical Society and Babies' Welfare Association, November 13, on "What the American Red Cross is Doing for French Children, and Its Application at Home."——Major Raymond G. Hussey deliverd the Gross Lecture before the Pathological Society of Philadelphia, November 14, his subject being "Army Medical Laboratory Work in France."——Dr. Mary E. M. Loog has been appointed assistant school medical inspector.——Dr. Alonzo E. Taylor, former professor at the University of Pennsylvania, sailed for Europe, November 16, to be Mr. Herbert Hoover's assistant in the task of rationing Germany. Dr. Taylor will represent both the food administration and the war trade and it is expected that he will go to the Balkans and take charge of the situation there.——Major John W. H. Pollard, U. S. M. C., has been appointed attending surgeon of the Army for the city of Philadelphia.

TENNESSEE

Personal.—Dr. Matthew C. McGannon, Nashville, has been appointed chairman of the British Recruiting Mission for the Nashville District.——Dr. Ben H. Brown, former food inspector of Chattanooga, has been appointed director of health of the city.——Dr. Owen K. Womack has been appointed local surgeon for the Louisville and Nashville system at McKinnon.——Dr. Eugene L. Bishop, Columbia, has been appointed state director of rural sanitation and state epidemiologist.

Hospital News.—Accommodation for ninety-two nurses has been provided at the Knoxville General Hospital, in a nurses' home which is now almost completed. This home takes in the buildings formerly used by the Tennessee Medical College and the laboratory.——Two tent-houses are to be erected at the United States Marine Hospital, Memphis. They will have wooden floors and will be weatherboarded for about 4 feet from the floor, and will be used as quarters for sufferers from tuberculosis.——A health resort is to be erected in the Lookout Mountain Hospital on the top of Lookout Mountain by Dr. Clair C. Patch, Graysville.——The board of directors of the East Tennessee Sanatorium for Tuberculosis has submitted to the government plans for a building and has requested permission to build. The plans provide to accommodate fifty patients, and the cost will be about $40,000.

TEXAS

New Hospital.—Formal approval of plans for a modern military hospital on the grounds of the State Agriculture College, College Station, is reported by the president. The hospital will be a frame construction, and will cost about $56,000.

Personal.—Dr. William W. Samuell, Dallas, who has been seriously ill with influenza, is reported to be convalescent. ——Dr. H. Reid Robinson, Galveston, who has been seriously ill at St. Paul's Sanitarium, Dallas, is reported to be improving slowly.——Dr. Oscar H. Mengel, Frackville, is ill at his home with pneumonia following influenza.

WISCONSIN

Fees Held by County.—Hundreds of dollars, fees for making out birth certificates, are awaiting Milwaukee physicians and midwives in the office of the county clerk.

Emergency Hospital Opened.—An emergency hospital has been opened by the local Red Cross chapter in the Garfield School building, Washburn, for the care of cases of influenza.

Personal.—Dr. Arthur G. Benson, Viroqua, who has been seriously ill with pneumonia following influenza, is now believed to be out of danger.——Dr. Wilbur G. Melaas, Beloit, is reported to be seriously ill with rheumatic arthritis.

Sanatorium News.—Work will begin within a few days on the excavation for the tricounty tuberculosis sanatorium to be built by Bayfield, Madison and Iron counties, at Salmo, about 5 miles north of Washburn. The name adopted for the sanatorium is the Pureair Sanatorium and the buildings will be erected at a cost of about $68,000.——A sanatorium has been offered to the Madison Anti-Tuberculosis Association by Dr. Charles H. Vilas. The sanatorium consists of five buildings on a site in Blooming Grove. It is equipped with heating furnaces and grates, an electric light and power system, artesian water, intercommunicating telephones and furnishings. This is offered to the association by Dr. Vilas in memory of his mother, Esther Smilie Vilas. The gift of Dr. Vilas was accepted by W. S. Heddles, at the meeting of the association, October 8. Dr. Louis R. Head, Madison, president of the association, is to be director of the hospital.

WYOMING

Personal.—Dr. Horace P. Holmes, for many years a practitioner of Sheridan, is reported to have been adjudged insane, October 15, and to have been committed to the State Hospital, Evanston.——Dr. J. Hoyt Huckins has been appointed superintendent of the Wyoming School for Defectives, Lander, to succeed Dr. Thomas G. Maghee.——Dr. John H. Young, San Diego, surgeon of the Union Pacific Gold Company at Rock Springs for the last eighteen years, was presented with a gold watch and fob by the officials and employees of the company, recently, in recognition of his services as company physician.

CANADA

Personal.—Col. George E. Armstrong, C. M. G., Montreal, will read a paper before the Academy of Medicine, Toronto, December 3, on "The Effect of the War on Surgery, Civil and Military."——Capt. Charles F. Atkinson, C. A. M. C., Edmonton, Alta., has been awarded the military cross.——Col. Gilbert Royce, M. D., has returned to Toronto from overseas.

Total of Canadian Casualties.—Ottawa issued, November 15, statistics as to the Canadian casualties up to that date. More than 55,000 Canadian soldiers have given up their lives in the war, all the casualties totalling 213,268, but these will be increased after the returns for Mons are in. To date the casualties are: killed in action, 35,128; died of wounds, 12,048; died of disease, 3,409; presumed dead, 4,620; missing, 842; wounded, 154,361; prisoners of war, 2,860.

Influenza Statistics for Toronto.—Dr. Charles J. C. O. Hastings, Toronto, medical officer of health, has compiled the following figures relative to the deaths from influenza and pneumonia: under 1 year of age, 44; from 2 to 9, 146; under 10 years of age, 190; from 10 to 19, inclusive, 126; from 20 to 29, 455; from 30 to 39, 376; from 40 to 49, 94; from 50 to 59, 63; from 60 to 69, 31; from 70 to 79, 24; 80 years and over, 4, and ages not known, 15. With a population of 490,000, there were 1,614 deaths.

GENERAL

Æsculapians Meet.—The second annual meeting of the Æsculapian Society of the Wabash Valley was held at Terre Haute, Ind., this month. Dr. Joseph Hall, Westfield, Ill., was elected president.

Cancellation of Appeal for Collection of Scrap Platinum.—The chief of the section of medical industry and the chief of the platinum section announce to the doctors and dentists of the country their appreciation of the hearty response made to the call for scrap platinum, and request that no further scrap platinum be turned to the government through the channels indicated in their previous communication.

Bequests and Donations.—The following bequests and donations have recently been announced:

Malden, Mass., Hospital, $5,000 by the will of Mary Benson, Brooklyn.

United Charities, Chicago, $25,000; Chicago Home for Incurables, Home for the Friendless and Visiting Nurses' Association, each $10,000 by the will of George R. Thorne, Chicago.

Russell Sage Institute of Pathology, New York City, an endowment fund of $300,000, Adirondack Cottage Sanatorium, $25,000 by the will of Mrs. Russell Sage, New York City.

Twelve thousand dollars for the construction of a hospital for the white race, and a similar amount for provisions for negroes of the community by the will of R. J. Reynolds, Winston-Salem, N. C.

Report of Medical Commission to Ecuador.—During the summer a commission of which Dean Arthur I. Kendall, Prof. Charles A. Elliott and Prof. H. E. Redenbaugh of the Northwestern University Medical School, Chicago, were members, was sent by the Rockefeller Foundation to Ecuador to make a study of disease prevention on the west coast of South America, having in view a greater trade with that region after the war. The commission returned in October after having been well received and given every facility for the study of the questions involved, the chief of which is the prevention of yellow fever. The report will be issued soon.

Cooperative Tuberculosis Campaign. — As previously announced, the Red Cross will not conduct a Red Cross Seal campaign this year. To take the place of funds raised by this means in fighting tuberculosis the Red Cross will appropriate to the National Tuberculosis Association, $2,500,000. This will be distributed by the national association to the various state anti-tuberculosis associations and not to any local organizations, except in a few instances where independent seal campaigns have been conducted, as in New York City, Brooklyn and Pittsburgh. The appropriations will be made quarterly to the various state organizations, beginning about January 1. The state organizations will have full power to distribute the funds throughout the respective states. It is expected that each state will receive an amount equal to that heretofore raised by the sale of seals, but the exact amount cannot be stated at this time. The Red Cross will secure the money appropriated for the tuberculosis campaign by its campaign for members which will be conducted this fall. Complete arrangements with reference to the membership campaign will be announced soon.

FOREIGN

Italian Scholarship in Great Britain.—The *Riforma Medica* states that the Italian government has presented 300 pounds sterling to the Ramsay Fund, instituted in London to encourage the study of the chemical sciences. A scholarship will be assigned in Great Britain to some Italian chemist.

New Degree at Birmingham University.—As announced, May 23, 1918, by Sir Oliver Lodge, principal of Birmingham University, a degree corresponding to the Ph.D. degree will be granted at Birmingham to foreign students who enter the university for higher study. This is one of the outcomes of the war, and is intended to provide for graduate students who will not now want to go to Germany as many students formerly did.

Medical Students of Switzerland.—In the five universities of Switzerland, 1,725 students were enrolled during the summer semester. These were distributed as follows: at Basle, 220, including 174 Swiss, of whom 15 were women, and 46 foreign, of whom 4 were women; Berne, 385, including 242 Swiss, of whom 27 were women and 143 foreign, of whom 16 were women; Geneva, 381, including 163 Swiss, of whom 16 were women and 218 foreign, of whom 58 were women; Lausanne, 225, including 159 Swiss, of whom 13 were women, and 66 foreign, of whom 16 were women, and Zurich, 504, including 350 Swiss, of whom 56 were women, and 154 foreign, of whom 16 were women.

Deaths in the Profession Abroad.—Marchese E. Laureati of Pisa, for two years assistant in Maragliano's medical clinic at Genoa and later assistant at the surgical clinic at Pisa after having served for two years with an Italian expeditionary force in Africa.——Dr. E. Pena, director at one time of the Assistencia Publica of Buenos Aires and long member of the city council. He had returned recently from an official trip to Europe to study sanitary methods.——Dr. H. Hoessli, director of the Balgrist Orthopedic Institute at Zurich.——Lieut.-Col. E. F. H. Dobson of the Indian Medical Service, retired, lost when the *Hirano Maru* was torpedoed off the coast of Ireland.——Dr. J. Ubeda y Correal, inspector in chief of the medical department of the Spanish army and a leading figure in the profession in Spain.

Novaro's Retirement.—Prof. G. F. Novaro retires this year from the chair of clinical surgery at the University of Genoa, having reached the age of 75. He is a senator of the realm, and was one of the pioneers in surgery in Italy. He is said to have been the first in any land to apply gastro-enterostomy in treatment of ptosis; he also did typhlostomy for colitis, and a number of operations on the esophagus, common bile duct, etc., which at that time, as the *Riforma Medica* remarks, had not received the sanction of a foreign name. As early as 1890 his publications on the surgery of the stomach were based on extensive experience. He has presented his large library to the city of Genoa, and a special hall has been set apart for it. Funds have been appropriated or are being collected to maintain this Novaro hall permanently as an up-to-date medical library in the public library building.

CORRECTION

Incorrect Report of Death of Capt. Warren Walker.—In the October 26 issue of The Journal it was noted that Capt. Warren Walker, M. C., U. S. Army, was burned to death, October 9, at Colonia, N. J. The Journal was advised that there was a Captain Walker burned to death at this time but not the Captain Walker referred to in the item, that one having been promoted to a majority and is in active service in the office of the Surgeon-General, Washington, D. C.

LONDON LETTER

London, Oct. 31, 1918.

The Influenza Epidemic

Influenza is still widely prevalent and is imposing a great strain on physicians, who are exhausted in having to visit so many patients. Some are unable to complete the round of all the patients on their lists. In the ninety-six great towns of England and Wales, with an aggregate population estimated at 16,500,000, the number of deaths attributed to influenza last week was 4,482, of which 1,256 were in London. These figures refer only to the civil population. The deaths in London attributed to influenza amounted to nearly half the deaths from all causes. At this time of year the normal number of deaths from influenza would be only 5. The figures in the preceding three weeks were 17, 80 and 371. The effect of influenza is further shown in the rise of the general death rate. In the first week of October this corresponded to an annual rate of 12.6 per thousand, in the second week to 15.1, in the third to 20.7, and in the fourth to 30.9. Numerous conferences have taken place between representatives of the Local Government Board, the Board of Trade, and naval and military authorities, and bacteriologic investigations have been continuously made since the beginning of the summer outbreak. These show that bacteriologically this outbreak does not differ from other outbreaks of influenza, fatalities being due to secondary infections, chiefly by pneumococci and streptococci. The suggestion has been made that its severity is due to lowered nutrition consequent on food restriction; but of this there is no proof. Sir A. Geddes, minister of national service, replying to a question in Parliament as to what steps he had taken to provide an adequate medical service for the civil population in view of the present serious epidemic of influenza, said that all arrangements made in connection with the employment of physicians under the ministry of national service and all withdrawals of physicians from civil life for service with the armed forces of the crown during the past year have been made with full regard to the contingency of a widespread epidemic disease affecting the population. Influenza has been more or less prevalent in epidemic form for some months, and the calls on the civil medical profession have consequently been heavy. Simultaneously, severe fighting on a great scale in all theaters of war has imposed an additional heavy strain on our medical resources. In April, Parliament conferred powers on the minister of national service that enabled him medically to examine men of military age at any time. In view of possible emergencies this power was largely used, approximately 7,000 physicians being employed and very large numbers of men being examined. Concurrently, with the increase of influenza, the number of physicians employed on medical board work has been reduced, thereby rendering an increasingly large body of physicians available for exclusively civil practice. The number of medical board sessions has been reduced from approximately 3,500 to 1,000 a week. This has not affected recruiting, as the pool formed by examining men in advance has been sufficient to maintain the flow of men to the forces. In order further to reinforce the physicians available to attend the civil population, all medical examinations in advance are to be suspended for the present.

A conference of bacteriologists to discuss preventive vaccination for influenza has been held at the War Office under the chairmanship of Col. Sir William Leishman. The majority of those present agreed that there was considerable doubt as to the primary etiologic significance of *Bacillus influenzae* of Pfeiffer, and considered that the existence of some as yet undiscovered virus must be regarded as possible. They had, however, no doubts as to the frequent presence of Pfeiffer's organism in this epidemic, or as to the great importance of the part it played in the production of the symptoms and complications of the disease. The organisms most frequently associated with *B. influenzae* and chiefly responsible for the gravity of the secondary pulmonary complications were pneumococci and streptococci. It was unanimously agreed that a vaccine might prove valuable produced from *B. influenzae*, the pneumococcus and the streptococcus. A number of strains and types of each organism recently isolated from cases of the epidemic should be used. The first dose should consist of 30 millions of *B. influenzae*, 100 millions of pneumococcus and 40 millions of streptococcus. A second dose of twice these numbers should be given after ten days. While it would be preferable to vaccinate before exposure to infection, the vaccine need not be withheld from a body of men among whom influenza had already appeared, excepting those who have fever or are obviously ill.

Prevention of Anthrax

The departmental committee appointed in 1913 to inquire into precautions for preventing danger of infection from anthrax in the manipulation of wool, goat hair and camel hair has issued its report. Among the most important recommendations is the abandonment of the attempt to control anthrax by regulations as being totally inadequate. The committee states that the simplest, cheapest and most effective method of preventing anthrax in the various branches of the wool trade is by disinfection of wool and hair abroad. It is recommended that the British government should establish the disinfection authority and should then take steps to obtain the cooperation of the governments of other countries.

The Standardization of Clinical Thermometers

Under the Defense of the Realm regulations, the Ministry of Munitions has ordered that no clinical thermometer shall be sold which has not been tested and approved by the director of the National Physical Laboratory. For one month after the date of the order, no thermometer showing at any point in its registration of temperature an error of more than 0.4 F. will be approved. On the expiration of this period, no thermometer shall show an error exceeding 0.2 F. over the range up to 106 F. Above this temperature, the error shall not exceed 0.3 F. For thermometers graduated in degrees other than Fahrenheit, corresponding tolerances will be allowed. A thermometer will not be approved if it is not self-registering with a constriction, which must be such as to retain the index column and also allow of the mercury being reset. Approved thermometers will be marked with the National Physical Laboratory trade mark and the year of test. The charge for testing a thermometer will be 6 cents, including carriage to sender.

PARIS LETTER

Paris, Oct. 24, 1918.

Treatment of War Wounds of Nerves

This subject was discussed at the recent Twenty-seventh French Congress of Surgery, especially from the standpoint of remote results of treatment. So far as indication for operation is concerned, the majority of the surgeons who spoke were in favor of such intervention, in spite of the teachings of the neuropathologists of Bordeaux, who claim that surgical intervention in wounds of nerves is not only useless but harmful because it interferes with the regeneration of the nerve. Dr. Walther of Paris stated that operation is not performed often enough in these cases, hence too many of these men are incapacitated two and three years after the injury of the nerve because they had not been subjected to operation. This is due to the fact that for a long time physicians, and also some surgeons, have been opposed to radical resection, followed by suture or grafting, of injured nerves presenting evidence of a complete lesion and which were not responding quickly to medical treatment.

REMOTE RESULTS

Dr. Delagenière of Mans presented some interesting statistics on 338 cases of wounded nerves in which surgical treatment was employed: resection and suture, 236 cases; resection and nerve grafting, 9 cases; neurolysis or nerve liberation, 113 cases. Resection and suture was followed by 88 per cent. of successes; the 9 grafting cases yielded 3 good results and 6 failures; neurolysis has given good results only in cases of simple compression of the nerve. Dr. P. Wiart of Paris has full data on the remote results in 86 cases of projectile injury of the radial nerve in which he operated. There were 25 sutures and 61 liberations. Of the suture cases, a cure was obtained in 20 per cent. with improvement in as many more; among the neurolysis cases, 33 per cent. of cures were obtained and in 25 per cent. the patients were improved. These were all old cases, many of them being cases of long standing suppuration, with fractures. Operation done in recent cases, as early as possible, will yield far better results. Dr. L. Sencert of Nancy spoke on the subject of dead heteroplastic nerve grafts, applying to the human the experimental work done on animals by Dr. Nageotte. From a still-born calf the sciatic nerve is removed, placed in alcohol, and when sterilization is sufficient the graft is placed between the ends of the divided nerve and sutured in place. This method has given good results experimentally on animals, and Sencert has used it in the human for a loss of substance of 10, 12 or 13 cm. of the nerve. Sencert recommends the use of this method, in preference to other graft methods, in all cases in which there is a considerable gap in a nerve.

Treatment of Tuberculosis with Injections of Saccharose

For some time one of the daily papers has made a strong propaganda in favor of the treatment of tuberculosis according to the method of Dr. Lo Monaco of the University of Rome. Inasmuch as the readers of The Journal have been interested in this method, it will be interesting to refer to some experiments that have been made in France.

At the last meeting of the Société de thérapeutique, Dr. Louis Rénon and Dr. Mignot reported the results of their researches on the treatment of human and experimental tuberculosis by means of injections of saccharose. Guinea-pigs were inoculated with tubercle bacilli and then injected with saccharose. The disease was not modified in any way. In fact, these guinea-pigs died sooner than others similarly inoculated but not injected with saccharose. Among the humans the results were also negative, not only in the pulmonary cases but also in the bone and peritoneal cases of tuberculosis. Therefore, the authors conclude that these injections are ineffective in both experimental and human tuberculosis. Dr. Sergent of Paris, who has also investigated Lo Monaco's method, stated that while there was a slight, but inconstant, improvement in the general condition of the patient, manifested merely as a state of *bien-être* (well-being), the evolution of the disease was not modified. Dr. Robin of Paris has arrived at the same conclusion as the previous speakers. These clinical and experimental observations show that Lo Monaco's method does not possess the marvelous efficacy with which it is endowed by the lay press.

Less Stringent Regulations on Flour Consumption

M. Victor Boret, minister of agriculture and food commissioner, has submitted to the president of the Republic a decree authorizing for use as food the flour of all cereals, such as corn, rye, méteil (a mixture of wheat and rye) and buckwheat, the use of which was prohibited during the war except for baking bread. But the use of these cereals will be permitted only for purposes already authorized and within very narrow limits. However, the decree amplifies the bread and flour tickets. Henceforth, a 100 gram ticket entitles the holder to 80 grams of regulation bread (in lieu of 50 grams) and 75 grams of flour (in lieu of 50 grams), as heretofore.

Death of Dr. Braillon

Dr. Braillon, professor of clinical medicine in the Ecole de médecine et de pharmacie at Amiens, died from an infection contracted from our wounded soldiers to whom he was ministering.

Marriages

Lieut. Lucius Lamar Terry, M. C., U. S. Army, Bessemer, Ala., on duty with the Thirty-First Division, Camp Wheeler, Ga., and now overseas, to Miss Bess Gilder of Carbon Hill, Ala., recently.

Prentiss Edward Parker, Bourg, La., to Miss Annie Mainer Williams of Livingston, Texas., at New Orleans, October 11.

Asst. Surg. Richard Parker Bell, Lieut. (j. g.) U. S. Navy, assigned to duty on *U. S. S. Charleston*, to Miss Dunham of Lakewood, Cleveland, October 26.

Lieut. Pierre Numa Charbonnet, M. C., U. S. Army, New Orleans, to Miss Blanche Joan Rogers of Winfield, Kan., at Waynesville, N. C., October 22.

John Allan Wyeth, New York City, to Miss Marguerite Chalifoux of Boston, November 15.

Deaths

Lieut.-Col. Alexander Watson Williams, M. C., U. S. Army ⊕ Johns Hopkins University, Baltimore, 1912; aged 34; honor graduate and medalist Army Medical School, 1914; who entered the Army in September, 1913; and after duty at Texas City, Texas, was ordered to Manila, where he served from March, 1916, to November, 1917, as captain and major Medical Corps; and on his return to the United States organized and equipped for overseas duty Hospital Train No. 29, at Fort Benjamin Harrison, Ind.; was on duty at Camp Sherman, Chillicothe, Ohio, in March, 1918; and was ordered to Camp Lee, Va., in April, 1918, to organize, equip and command Base Hospital No. 45, American Red Cross, Richmond, Va., and went overseas with his command, July, 1918, died in France, October 5, from illness.

John Errington Ker, Kingston, Jamaica, M.R.C.S., England, 1887; L.R.C.P., London, 1888; aged 58; chairman of the quarantine board and central board of health, Kingston, Jamaica; civil surgeon attached to General Hospitals, Nos. 2 and 3, South African Field Forces during the Boer War; who had come to New York, three weeks before, to study sanitation, died from meningitis in the Post-Graduate Hospital, New York City, October 25.

Died in the Service
in France
Lieut.-Col. A. W. Williams, M. C.,
U. S. Army, 1884-1918

Frank E. Bissel, Minneapolis; University of Wooster, Cleveland, 1869; aged 73; a veteran of the Civil War; for several terms mayor of Litchfield, Minn., and a member of the legislature from Meeker County in 1875; from 1901 to 1903 surgeon to the Soldiers' Home; and for one term surgeon of the Department of Minnesota, G. A. R.; died at his home, November 5.

Carl Lawrence Souder ⊕ Columbia City, Ind.; Northwestern University Medical School, Chicago, 1898; aged 44; who served one year in the Medical Reserve Corps, U. S. Army, and was honorably discharged, April 12, 1918, on account of physical disability; died in the Lutheran Hospital, Fort Wayne, Ind., October 25, from meningitis following an operation for sinusitis.

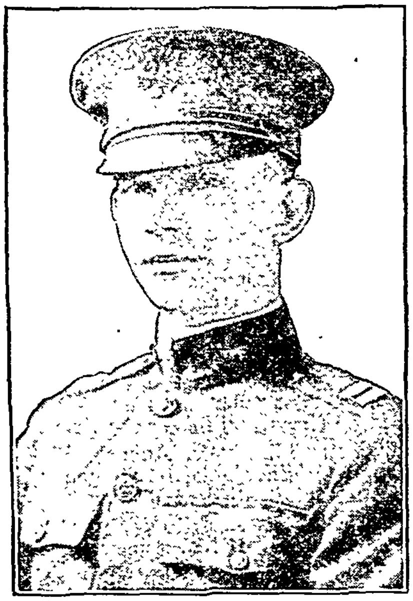
Asst. Surg. William Henry Buffum, Lieutenant, U. S. Navy ⊕ Providence, R. I., Harvard Medical School, 1902; aged 41; a specialist in pediatrics; one of the officers of the Rhode Island Naval Hospital Unit, which started overseas a few weeks ago; died in a hospital in Liverpool, England, October 13, from pneumonia following influenza.

Edward A. Whitmore ⊕ Leadville, Colo.; Gross Medical College, Denver, 1896; aged 65; for several years secretary and once president of the Lake County, Colo., Medical Society in 1915; local surgeon of the Denver and Rio Grande Railroad; city physician from 1900 to 1902; died at his home, November 8, from influenza.

Vishwas Ramual Karmarkar, Pittsburgh; University of Pennsylvania, Philadelphia, 1918; aged 27; a native of India, who was preparing for medical missionary work in his native country; an intern in the Allegheny General Hospital, Pittsburgh, died in that institution, October 10, from pneumonia following influenza.

Walter Scott Mountain, Confluence, Pa.; Philadelphia University of Medicine and Surgery, 1870; aged 80; a member of the Medical Society of the State of Pennsylvania; surgeon of U. S. Volunteers during the Civil War and thereafter a druggist of Confluence; died at his home, about October 29, from influenza.

Roy Francis Rogers, Springfield, Ill.; Rush Medical College, 1901; aged 42; a member of the Illinois State Medical Society; a member of the Aesculapian Society of the Wabash Valley, and of the staff of St. John's Hospital, Springfield; died at his home, October 21, from pneumonia following influenza.



Died in the Service
IN FRANCE
Capt. Alfred Glascock, M. C., U. S. Army, 1881-1918

Capt. Alfred Glascock, M. C., U. S. Army ⊕ Washington, D. C.; George Washington University, Washington, D. C., 1902; aged 37; formerly a member of the staff of St. Elizabeth's Hospital, Washington; while serving as psychiatrist at a base hospital in the interior of France, died from pneumonia, October 10.

Howard Kerns ⊕ Granite Falls, Minn.; University of Maryland, Baltimore, 1909; aged 42; a specialist in tuberculosis; secretary of the Yellow Medicine County Medical Society, and Camp Release District Medical Society; died at his home, October 17, from bronchopneumonia following influenza.

Newton Phineas Smith, Montville, Conn.; College of Physicians and Surgeons in the City of New York, 1882; aged 66; a member of the Connecticut State Medical Society; also a pharmacist; for thirty-five years a practitioner of Norwich; died at his home, October 3, from cerebral hemorrhage.

Elizabeth Cowan Sleight ⊕ Mount Vernon, N. Y.; Woman's Medical College of the New York Infirmary for Women and Children, 1893; aged 60; resident physician of the Auxiliary Hospital, Mount Vernon; died at her home, November 5, from pneumonia following influenza.

George Oswell Griffin, Greenville, S. C.; Medical College of Georgia, Augusta, 1901; aged 41; who entered the ministry soon after his graduation, and was pastor of the Third Presbyterian Church of Greenville; died at his home, October 9, from pneumonia following influenza.

George Cerny, St. Louis; St. Louis College of Physicians and Surgeons, 1913; aged 44; a member of the Missouri State Medical Association; and a member of the eye, nose and throat staff of Barnes Hospital, St. Louis; died at his home, September 13, from pneumonia.

George Guyer Gill ⊕ Fairview, Pa.; Jefferson Medical College, 1910; aged 35; first assistant physician at the State Hospital for the Criminal Insane, Fairview, Pa., a specialist in psychiatry; died at his home, November 4, from pneumonia following influenza.

Paul Rimer Doron, Phoenix, Ariz.; Washington University, St. Louis, 1905; aged 35; who went as a volunteer from Phoenix, to assist in the fight against influenza at Bisbee, Ariz., died about October 31, at his home, from pneumonia following influenza.

Wilhelm Rudolph Fisher ⊕ Wichita, Kan.; Northwestern University Medical School, Chicago, 1909; aged 33; a member of the staff of St. Francis' Hospital, Wichita; died in a hospital in that city, November 6, from bronchial pneumonia following influenza.

Albert Beilstein, Jr., Northampton, Pa.; University of Louisville, Ky., 1908; aged 32; a member of the Medical Society of the State of Pennsylvania; assistant physician of Dr. Haff's Hospital, Northampton; died at his home, October 27.

Lieut. Thomas Purley Johnston, M. C., U. S. Army ⊕ Mount Gilead, Ohio; Ohio State University, Columbus, 1910; aged 36; who sailed for France, September 27, died in an American Base Hospital in France, October 7, from pneumonia.

Capt. Claude Melville Campbell, M. C., U. S. Army ⊕ Decorah, Iowa; Northwestern University Medical School, Chicago, 1910; aged 33; on duty at Fort Riley, Kan.; died at Glencoe, Minn., October 23, from pneumonia following influenza.

Lewis Hasbrouck Kemble, Aspen, Colo.; University of Michigan, Ann Arbor, 1889; aged 51; surgeon of U. S. Volunteers during the Spanish-American War; died in Glenwood Springs, Colo., October 15, from heart disease.

Gardner Holway Osgood, Boston; Boston University, 1909; aged 39; roentgenologist of the Massachusetts General Hospital; died in the Evans Memorial Building of that institution, October 18, from pneumonia following influenza.

Calvin Fuller Kyte ⊕ Jersey City, N. J.; New York University, New York City, 1881; aged 68; visiting physician to X-Street Hospital, Jersey City, attending physician to Christ Hospital, Jersey City; died at his home, November 8.

John Edwin Sclanker, San Francisco; College of Physicians and Surgeons, Los Angeles; 1918; aged 34; an intern in the Southern Pacific General Hospital, San Francisco; died, October 15, from pneumonia following influenza.

Louis W. Salvin, Boston; Boston University, 1914; aged 31; a member of the Massachusetts Medical Society; died in the Massachusetts Homeopathic Hospital, Boston, September 25, from pneumonia following influenza.

Harlow Comstock McLeod, Mexico City, Mexico; College of Physicians and Surgeons in the City of New York, 1898; formerly of Batavia; was shot and killed in Mexico City, October 17, in an argument over the war.

Frederick Wheaton Baylies, Burlington, Vt.; University of Vermont, Burlington, 1897; aged 47; instructor and adjunct professor of chemistry in his alma mater for two years; died at his home, October 23, from influenza.

Lieut. Grover Carter, M. C., U. S. Army ⊕ Memphis, Tenn.; University of Tennessee, Nashville, 1917; aged 26; who had been overseas since October, 1917, serving first in England, in a base hospital, and later assigned to duty with the British Army in Flanders, and attached to the One Hundred and Twenty-First Brigade, Royal Flanders Artillery; was killed by a shell, October 16, while attending a wounded officer.

Died in the Service
IN FRANCE
Lieut. Grover Carter, M. C., U. S. Army, 1892-1918

Richard Daingerfield Bagnall, Hampton, Va.; University of Pennsylvania, Philadelphia, 1860; aged 80; surgeon in the Confederate Service during the Civil War; died at the Dixie Hospital, Hampton, Va., November 1.

Sigurd Anton Berg, Granite Falls, Minn.; Rush Medical College, 1905; aged 38; a member of the Minnesota State Medical Association; died at his home, October 11, from pneumonia following influenza.

William Rupert Bebout, Browning, Mont.; Starling Medical College, Columbus, Ohio, 1905; aged 39; an officer of the United States Indian Service; died at his home, October 30, from pneumonia following influenza.

William I. Newberry, Smithfield, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1896; aged 47; died at his home, October 30, from pneumonia following influenza.

Warren H. Loomis, Lockport, N. Y.; Long Island College Hospital, Brooklyn, 1878; aged 63; a member of the Medical Society of the State of New York; died in the City Hospital, Lockport, October 30, from influenza.

Lieut. Frank Leonard Hammerstrand, M. C., U. S. Army ⊕ Sacred Heart, Minn.; University of Illinois, Chicago, 1909; aged 37; died in a hospital in New York City, October 26, from pneumonia following influenza.

Died in the Service
IN FRANCE
Lieut. Winfield S. Faulds, M. C., U. S. Army, 1873-1918

Lieut. Winfield Scott Faulds, M. C., U. S. Army ⊕ Roy, Mont.; Dearborn Medical College, Chicago, 1906; aged 45; commanding Camp Hospital No. 7, Thirty-Third Division, in France; died recently from pneumonia.

B. Bywaters, Van Ormy, Texas; Cincinnati Medical College, 1858; aged 80; postmaster and justice of the peace of Van Ormy for thirty-five years; died at his home, August 18, from inflammation of the bladder.

Thomas Hudson Weirich, Wellsburg, W. Va.; University of Michigan, Ann Arbor, 1873; aged 70; a member of the West Virginia State Medical Association; died at his home, November 5, from pneumonia.

Edward Elliott Morgan ⊕ North Henderson, Ill.; Keokuk Medical College, College of Physicians and Surgeons, 1905; aged 36; died at his home, November 1, from pneumonia following influenza.

Lieut. Burton Robert Carpenter, M. C., U. S. Army ⊕ Clifton, Texas; Fort Worth, Texas, School of Medicine, 1912; aged 29; ordered for duty at Fort Riley, Kan.; died at Clifton, October 25.

Guy Henry Just ⊕ Pukwana, S. D.; University of Illinois, Chicago, 1900; aged 44; chairman of the Brule County Board of Health; died at his home, November 9, from pneumonia following influenza.

Hezekiah W. Brant, Geyser, Mont.; Hahnemann Medical College, Chicago, 1888; aged 62; at one time a member of the Medical Association of Montana; died at his home, October, 31, from influenza.

James Edward Culbert, Buffalo, N. Y.; Niagara University, Buffalo, 1892; aged 52; a member of the Medical Society of the State of New York; died at his home, October 26, from pneumonia.

Nimrod Terrell Underwood, Russellville, Ala.; University of Alabama, Mobile, 1888; aged 57; a member of the Medical Association of the State of Alabama, died at his home, October 27.

Christian Zbenden, Toledo, Ohio; Homeopathic Hospital College, Cleveland, 1882; aged 72; a member of the staff of Toledo Hospital; died in that institution, October 31, from pneumonia.

Stephen Joseph Metzger ⊕ Akron, Ohio; Western Reserve University, Cleveland, 1910; aged 38; coroner of Summit County, Ohio; died at his home, November 9, from pneumonia.

Robert Coleman Kenner, Louisville, Ky.; University of Louisville, Ky., 1879; aged 59; formerly editor of the *Therapeutic Record,* died at his home, October 28, from heart disease.

Russell Tomlinson Bishop, Savannah, Ga.; Bellevue Hospital, Medical College, 1893; aged 63; for many years a practitioner of Bridgeport, Conn.; died in Savannah, October 18.

Milton C. Vest, Greensburg, Ind. (license, Indiana, 1897); aged 68; for one term coroner of Decatur County; for forty-three years a practitioner; died at his home, November 5.

Lawrence T. Carr ⊕ Martinsburg, Mo.; Keokuk, Iowa, Medical College, College of Physicians and Surgeons, 1908; aged 29; died at his home, October 24, from pneumonia.

William Joseph Fretwell, San Jose, Calif.; Missouri Medical College, St. Louis, 1888; aged 50; died at his home, November 1, from pneumonia following influenza.

Herbert Holden Thomas ⊕ Huntsville, Ala.; University of Tennessee, Nashville, 1908; aged 36; died at his home, October 7, from pneumonia following influenza.

John Homer Eudy ⊕ Deport, Texas; Memphis, Tenn., Hospital Medical College, 1913; aged 32; died at his home, October 5, from pneumonia following influenza.

Zygmond Anthony Oborski, Wilkes-Barre, Pa.; George Washington University, Washington, D. C., 1917; aged 24; died at his home, November 1, from pneumonia.

Clark S. Wood ⊕ Fort Smith, Ark.; Jefferson Medical College, 1908; aged 41; died in Sparks Hospital, Fort Smith, October 21, from pneumonia following influenza.

Lieut. Louis Robert Kratze, M. C., U. S. Army ⊕ Chicago; University of Illinois, Chicago, 1912; aged 35; died recently at Camp Crane, Allentown, Pa., from influenza.

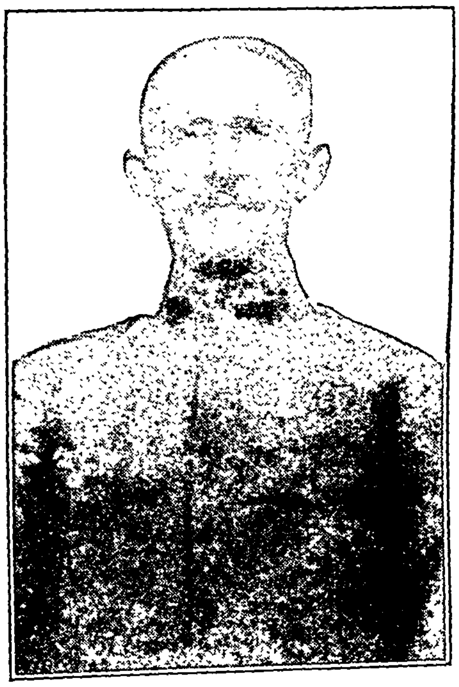
Dr. Antonio Onato, for six years surgeon on an Italian passenger steamer between America and Italy; aged 39; died at Gibraltar, in October, from influenza.

Francis M. Hyatt, Auburn, N. Y.; Hahnemann Medical College, Philadelphia, 1873; aged 71; physician to the Auburn City Hospital, died at his home, October 31.

Lafayette Reese, Afton, Wyo.; Rush Medical College, 1910; aged 38; at one time a member of the Utah State Medical Association; died at his home, October 15.

Carey Val Billingsley, Santa Ana, Calif.; California Eclectic Medical College, Los Angeles, 1914; aged 30; died at his home, about November 3, from influenza.

Robert E. Steele ⊕ Salt Lake City, Utah; University of Illinois, Chicago, 1895; aged 48; died at his home, November 4, from pneumonia following influenza.



Died in the Service
IN FRANCE
Lieut. Franklin M. Hawley, M. C., U. S. Army, 1863-1918

Lieut. Franklin Marshall Hawley, M. C., U. S. Army ⊕ Bayfield, Wis.; Drake University, Des Moines, Iowa, 1883; aged 55; on duty in a hospital in France; died, October 24, from spinal meningitis.

John Henry MacDonald, New York City; New York University, New York City, 1886; aged 60; died at his home, November 9, from heart disease.

John Frederick Brott ⊕ Doon, Iowa; Drake University, Des Moines, Iowa, 1897; aged 41; was found dead in bed from heart disease, October 30.

Jesse Judson Dearborn, Milford, N. H.; University of Kentucky, Louisville, 1905; aged 43; died at his home, October 16, from pneumonia.

Melchi Bonebrake, Taylorville, Ill.; University of Pennsylvania, Philadelphia, 1867; aged 75; died at his home, October 23, from heart disease.

Jule Conrad, Suring, Wis.; Milwaukee Medical College, 1900; aged 52; died at a hospital in Green Bay, Wis., October 27, from influenza.

H. Taylor Campbell, Nashville, Tenn.; University of Nashville, Tenn., 1875; aged 70; died at his home, November 5.

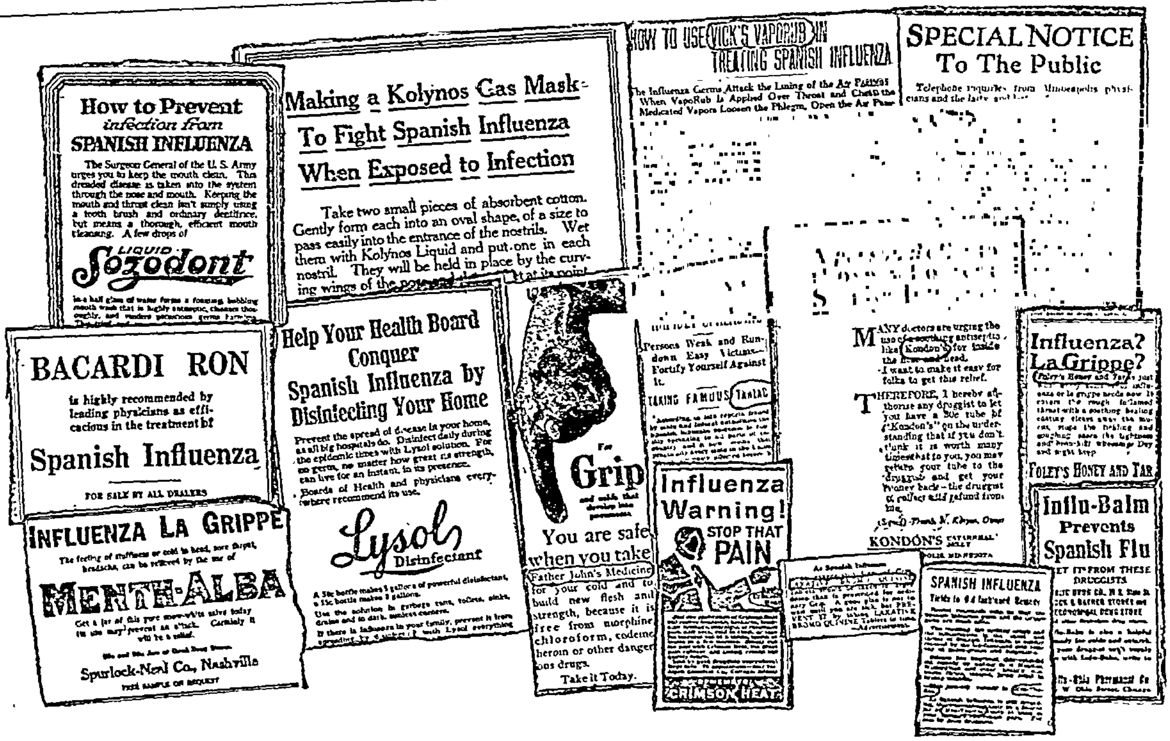
The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

THE KENNEDY'S TONIC PORT CASE

Booze Is Booze in Saskatchewan

When the sale of alcoholics is prohibited in a given territory, it is a notorious fact that the exploiters of those "patent medicines" whose chief and most active ingredient is alcohol, are not slow to avail themselves of the opportunity that presents itself of selling their wares to those who would use them for other than medicinal purposes. Nor is it strange that men who have previously been engaged in the liquor business, but whose business has been destroyed by prohibitory legislation, should seek to cater to their erstwhile customers by marketing liquor camouflaged as "patent medicines." Before the Dominion of Canada went "dry" some of the Canadian provinces had already enacted legislation of that type. Saskatchewan was one of them. Out of that provincial act and its aftermath, came the interesting Kennedy's Tonic Port Case.


How to Prevent infection from SPANISH INFLUENZA
Liquid Sozodont
Making a Kolynos Gas Mask To Fight Spanish Influenza When Exposed to Infection
HOW TO USE VICK'S VAPORUB IN TREATING SPANISH INFLUENZA
SPECIAL NOTICE To The Public
BACARDI RON
Spanish Influenza
INFLUENZA LA GRIPPE
MENTH-ALBA
Spurlock-Neal Co., Nashville
Help Your Health Board Conquer Spanish Influenza by Disinfecting Your Home
Lysol Disinfectant
Grip
You are safe when you take Father John's Medicine
Take it Today.
TAKING FAMOUS TANLAC
Influenza Warning! STOP THAT PAIN
CRIMSON HEAT
KONDON'S
Influenza? La Grippe?
FOLEY'S HONEY AND TAR
Influ-Balm Prevents Spanish Flu
SPANISH INFLUENZA

Of course the "patent medicine" manufacturers lost no opportunity of capitalizing the fear of the public in the present epidemic. Here are a few—just a few—advertisements reproduced in miniature. "Fortify yourself" against the Spanish Influenza by "Taking Famous Tanlac"—alcohol 16 per cent.! Make a "Gas Mask to Fight Spanish Influenza" by moistening two pieces of absorbent cotton with "Kolynos." Put a "few drops of Liquid Sozodont in a half glass of water," rinse out the mouth with the mixture, and "render pernicious germs harmless." Do you need "a powerful bulwark in preventing and treating" Spanish Influenza? Use "Benetol"! "No germ, no matter how great its strength, can live for an instant" in the presence of "Lysol"; hence, "Help Your Health Board Conquer Spanish Influenza," by the use of this preparation. "Influ-Balm Prevents Spanish Flu"; so, we are told, does "Laxative Bromo Quinine", but, in case you get the disease, you can get "relief in twenty minutes" by the use of "Men-Tho-Eze."

Kennedy's Tonic Port was booze, sold as "patent medicine." Its conflict with the law came when a bottle of the preparation was sold at a Regina drug store in November, 1917. The Saskatchewan authorities proceeded against this concern and the drug store proprietors were convicted in March, 1918, and fined $100; they thereupon appealed the case on the ground that, as they had been registered under the "Patent Medicine Act" of the Dominion government, they were thereby relieved of the necessity of complying with any provincial law, relative to the sale of "patent medicines." The judge, before whom the appeal was heard, decided against the drug concern, dismissed the appeal and amended the conviction by penalizing the drug store $500 instead of the original $100.

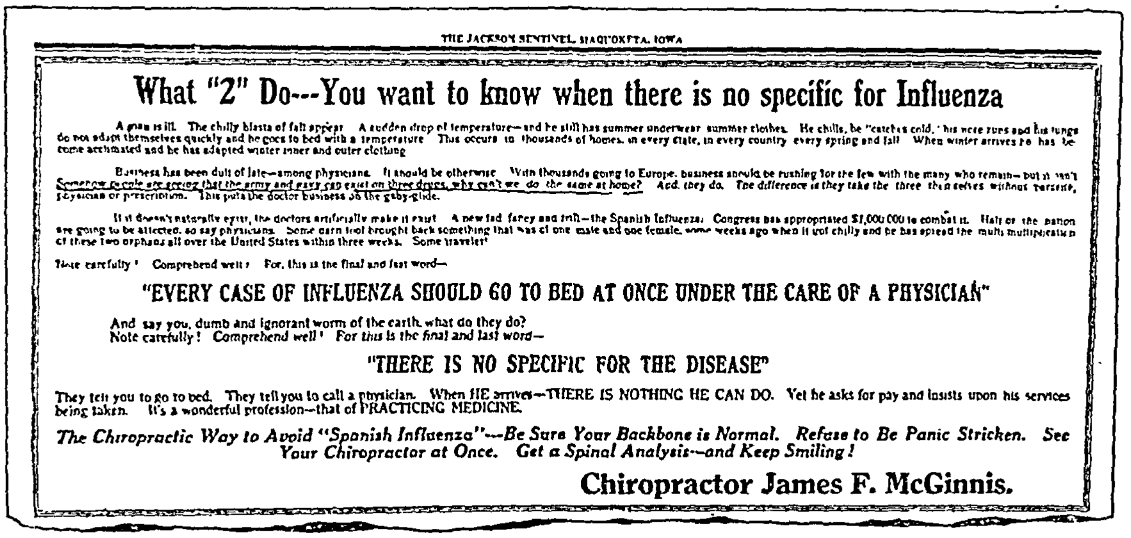
The opinion handed down by Judge Taylor of the King's Bench, before whom the appeal was tried, is an interesting document in "patent medicine" litigation, as the excerpts about to be given will show. After briefly stating the facts regarding the original conviction, and showing that the evidence established not only that a bottle of Kennedy's Tonic Port had been sold as charged but that the drug store was in the active business of selling this preparation, having, in fact, disposed of almost 700 bottles in a few months, Judge Taylor continued:

"The tonic port is a product or invention of one Joseph Kennedy. He claims to be a graduate of the British Society of Chemical Industry, and to be an expert in alcoholic chemistry. As he put it, he has spent most of a lifetime using alcohol as a solvent. For a period of 18 months, whilst the system of the licensing and sale of intoxicating liquor prevailed in Saskatchewan he was a hotel proprietor and licensee. The formula for the tonic port was, he says, conceived by him about 20 years ago, and was then put on the market by his then employers, whom he stated were a prominent manufacturing firm in the United States, under the name of 'Vitalito,' and it would appear that after the abolition of license in Saskatchewan he conceived the idea of placing this so-called tonic port on the market in Western Canada."

Of the composition of Kennedy's Tonic Port, it was admitted that the base of the preparation was ordinary port wine, to which Kennedy added a mixture which Judge

Taylor said "might best be termed a medical salad." Hyssop, dittany, Peruvian bark, orange peel, anise, coriander seed, genitan, yarrow, nutmeg, thyme, rose leaves—these were but some of the ingredients that were alleged to have been added, in quantities not disclosed, to the port wine. The amount of alcohol, however, was not unknown; it comprised about 16 per cent. by volume. The dose was a wineglassful, "equally efficacious before or after meals." The judge continued:

"As a medical salad this combination might be in great demand. The manufacturer says that it is a palatable mixture. No doubt every taste and palate should be tickled by the many different flavors. If it abhor the thyme for instance, it may find solace in the yarrow. Coriander seed would be delightfully reminiscent of home cooking, the esthetic will recognize the rose leaves. These and the six or more other ingredients in the above list added for their distinctive flavoring virtues and delightful aroma must indeed be designed to satisfy every demand. From cinchona and Peruvian bark, quinin is extracted and the manufacturer suggests that this and the gentian are valuable ingredients as cures for alcoholism. Thus there is a touch of philanthropy, though well concealed, in the salad. . . ."


THE JACKSON SENTINEL, MAQUOKETA, IOWA

What "2" Do---You want to know when there is no specific for Influenza

A man is ill. The chilly blasts of fall appear. A sudden drop of temperature—and he still has summer underwear, summer clothes. He chills, he "catches cold," his nose runs and his lungs do not adapt themselves quickly and he goes to bed with a temperature. This occurs in thousands of homes, in every state, in every country, every spring and fall. When winter arrives he has become acclimated and he has adapted winter inner and outer clothing.

Business has been dull of late—among physicians. It should be otherwise. With thousands going to Europe, business should be rushing for the few with the many who remain—but it isn't. Somehow people are seeing that the army and navy can exist on three drugs, why can't we do the same at home? And they do. The difference is they take the three themselves without nurse, physician or prescription. This puts the doctor business on the gaby-glide.

If it doesn't naturally exist, the doctors artificially make it exist. A new fad, fancy and frill—the Spanish Influenza. Congress has appropriated $1,000,000 to combat it. Half of the nation are going to be affected, so say physicians. Some darn fool brought back something that was of one male and one female, some weeks ago when it got chilly and he has spread the multi multiplication of these two orphans all over the United States within three weeks. Some traveler!

Note carefully! Comprehend well! For, this is the final and last word—

"EVERY CASE OF INFLUENZA SHOULD GO TO BED AT ONCE UNDER THE CARE OF A PHYSICIAN"

And say you, dumb and ignorant worm of the earth, what do they do?
Note carefully! *Comprehend well! For this is the final and last word—*

"THERE IS NO SPECIFIC FOR THE DISEASE"

They tell you to go to bed. They tell you to call a physician. When HE arrives—THERE IS NOTHING HE CAN DO. Yet he asks for pay and insists upon his services being taken. It's a wonderful profession—that of PRACTICING MEDICINE.

The Chiropractic Way to Avoid "Spanish Influenza"---Be Sure Your Backbone is Normal. Refuse to Be Panic Stricken. See Your Chiropractor at Once. Get a Spinal Analysis---and Keep Smiling!

Chiropractor James F. McGinnis.

"Be Sure Your Backbone is Normal"—"Get a Spinal Analysis—and Keep Smiling!" This is "The Chiropractic Way to Avoid Spanish Influenza"—Chiropractor McGinnis says so! Not, of course, that there is any such thing as influenza; it is merely "a new fad, fancy and frill." "If it doesn't naturally exist, the doctors artificially make it exist." Above all—and this is important—"See Your Chiropractor at Once." And this is the sort of stuff that the *Jackson Sentinel* of Maquoketa, Iowa, is willing, for a consideration, to spread the full width of its page, at advertising rates. It's a wonderful "profession"—Chiropractic.

"The method of manufacture, so far as the manufacturer cares to disclose the valuable secret, would not appear to interfere with the medicinal properties at least of the port wine, into which the combination is added by a method of solution into the alcohol constituent of the wine. It is still port wine, plus something indefinable. The color is that of port wine. One expert on the use of intoxicating liquors said that it tasted to him like ordinary port wine to which had been added a dash of a famous brand of 'bitters.' A number of witnesses who, in the interest of science for the most part, consumed on different occasions from a half to a whole quart bottle at what counsel termed 'a sitting,' deposed that it had a distinctly pleasing taste and produced that feeling of exhilaration which prior to the temperance legislation was recognized as intoxication. As to the aroma, the scientific tests made by counsel in the court room in his efforts to convince the provincial analyst that certain of the exhibits were not in a state of perfect preservation, convince the court that at least in that stage the aroma was strongly reminiscent of a busy bar-room."

Of course the manufacturer claimed that his "tonic port" had valuable medicinal properties and was incapable of being used as a beverage. He admitted that in 1917, the year in which Saskatchewan went "dry," the sales aggregated between $40,000 and $60,000, at the wholesale price of 75 cents a bottle. Moreover, like most "patent medicine" makers, he was able to produce at least one doctor who testified in his behalf that he had prescribed Kennedy's mixture as a "tonic." Said the judge, further:

"There is some dispute on the evidence as to whether or not there is so much quinin in the mixture that the use of it in doses beyond that prescribed on the label would be or would not be dangerous. A number of reputable witnesses swore that they consumed from half to almost a whole bottle without feeling any effects of quinin, and with the result obtainable ordinarily from drinking port wine. It is to be noted that on the label it is suggested that the use of this tonic port wine produces 'a feeling of buoyancy only attributable to perfect health.' I cannot conceive that any soberminded person suffering from any known ailment and knowing the contents of the mixture and that it contained the list of drugs which I have enumerated, would take it. It may be that the manufacturer has in some way neutralized in the mixture the effect of the different drugs contained in it. To me it seems that it is simply port wine, plus an obnoxious mixture, and I cannot overlook the fact that the secret of its manufacture lay dormant in Kennedy's mind until the abolition of the license system, and that the time was then most opportune for its manufacture, and I have no hesitation in holding that the purpose in the manufacture is simply to have put on the market port wine available for purchase without a medical prescription and to circumvent the different provincial enactments preventing the sale of intoxicating liquor. The claim that it cannot be used as a beverage is absolutely refuted in the testimony, and in the quantity sold. . . ."

"On the facts I cannot find that it contains sufficient medication or any treatment to prevent its use as an alcoholic beverage. In fact, my view is that it would have little or no sale except as an alcoholic beverage."

Correspondence

IS INFLUENZA TRANSMISSIBLE DURING THE PERIOD OF INCUBATION?

To the Editor:—Sherman Institute is a United States government school for Indian boys and girls under the United States Indian Service, at Riverside, Calif. It is a boarding school, drawing pupils from the western United States, between the ages of 8 and 20, the average being about 15. The entire expense is borne by the United States Indian Service. All of the pupils and about sixty employees are housed in dormitories on the campus, an eighth of a mile square, in an orange-growing district in the city of Riverside, 6 miles from the business center.

September 28, there arrived at the school, in care of a matron, seven Navajo boys and five girls from the San Juan Reservation at Ship Rock, N. M. En route, coming through Arizona, they encountered a woman manifestly ill with influenza. They traveled for several hours in the same sleeper with her.

Monday, September 30, C. D., one of these boys, was taken ill and sent to the school hospital on the grounds. Some intuition suggested to Mrs. Neff, the nurse in charge, that something new had come to the campus and he was immediately isolated for a possible contagion. It was evident later that he had influenza.

The following Wednesday, October 2, influenza burst on us as a storm. On that day, five boys of the party from Ship Rock came to the hospital ill with influenza and with them six other boys and three girls, making fourteen cases the first day. The second day, October 3, twenty-seven were added; October 4, forty-four; October 5, seventy. By the 8th, Tuesday, our total count was 387 cases of typical influenza of the so-called "Spanish" type. The accompanying chart gives the picture of the incidence of the disease. The last column shows how our fifty-bed hospital was filled to overflowing and four dormitory buildings became emergency hospitals in four days.

INCIDENCE OF INFLUENZA AT SHERMAN INSTITUTE, RIVERSIDE, CALIF.

	Boys	Girls	Total New Cases	Total to Date
Sept. 30 Immediately isolated	1	...	1	1
Oct. 2	11	3	14	15
Oct. 3	25	2	27	42
Oct. 4	33	11	44	86
Oct. 5	44	26	70	156
Oct. 6	36	41	77	233
Oct. 7	41	44	85	318
Oct. 8	26	43	69	387
Oct. 9	9	30	39	426
Oct. 10	6	17	23	449
Oct. 11-22	33	36	69	518
Totals	265	253	518	
Total pupils present Oct. 1, 1918	257*	313	517	
Total pneumonias to October 25				52
Total deaths to October 25, all from pneumonia				8
Total number of employees and members of families on the grounds				85
Influenza among employees and families (no pneumonias, no deaths)				34
Total influenza patients on campus				552

*Several boys came in early in October. Almost no boys escaped entirely.

Cornelius Van Zwalenburg, M.D., Riverside, Calif.

AN APPEAL FOR BELGIAN AND FRENCH PHYSICIANS

To the Editor:—I am writing on the birthday of that splendid patriot and monarch, King Albert of Belgium. I beg to remind my colleagues of the profession that now we shall be able to assist our Belgian and French colleagues who will be going back to their homes—in fact, are now going back to their homes in the territory evacuated by the barbarous Hun.

Money is especially needed now. The large number of instruments that I have acknowledged in The Journal from time to time have gone forward and more will be welcome; but, after all, the needs of these utterly destitute men can best be met by contributions in money. This money ought also to be forwarded as quickly as possible. I shall hope to send a large Christmas gift to Dr. Depage at LaPanne and the committee in Paris for the Belgian and French physicians, respectively. *Bis dat qui cito dat.*

W. W. Keen, M.D., Philadelphia.

DEMOBILIZATION OF MEDICAL OFFICERS

To the Editor:—With the big war over—for all are agreed that the signing of the armistice ended the war—although theoretically we are in a state of war until the peace conference concludes its work, a goodly portion, if not a large majority, of the more than thirty thousand physicians in service are anxious to resume their civil status. While it is recognized that there is an immense work ahead of our military establishment and while the army of occupation will require a considerable number of medical officers, it is to be hoped that the War Department will adopt a policy of at least consulting the wishes of medical officers over 40 years of age, with dependents, and dependent on their professional incomes, before continuing them on the active list. Physicians of this age may resume their civil status after an absence of a year or eighteen months practically picking up their business where they left it, whereas if they are to become a part of the army of occupation or are kept on duty in camps throughout this country for the next year or two, they will practically have to reestablish themselves; no easy matter for the physician beyond 40 years of age. The writer, always an ardent supporter of organized medicine, and appreciating the efforts of the American Medical Association to secure justice on all occasions for its members, urges The Journal to forcibly bring this matter to the attention of the Surgeon-Generals of the Army and of the Navy. While all due honor and praise should be accorded the younger members of the profession who answered their country's call, it is believed that the greater sacrifice was made by those older men who, in a time of stress, although established in practice and surrounded with young families gave up all that made life dear to them by coming into the military service. These physicians should be returned to a civilian status as rapidly as possible.

(Signed) Caduceus.

PROTECTING THE EYES IN INFLUENZA EPIDEMICS

To the Editor:—The use of an efficient mask to cover nose and mouth has been thoroughly well exploited. Notes are beginning to come in now of nurses and others contracting influenza despite the use of masks and washing of hands. The fact that the eyes are exposed to mouth spray has been generally overlooked, and little reference, if any, has been made to the necessity of wearing some protection for the eyes. It is obvious that the eyes may be directly infected, or that the organisms falling on the eyes may be carried by the tear ducts to the nose, and therefore to the throat and mouth.

I have seen an instance in which diphtheria was contracted by a most careful physician who wore a mask and washed his hands, the fact being that the patient from whom he was taking a culture coughed directly into his eyes. He did not contract diphtheria of the eye, but of the throat. His exposure was limited to one evening when he relieved the regular man in charge of a diphtheria ward. It is well known that in the pneumonic form of the bubonic plague the necessity of precautions to cover the eyes as well as the nose and mouth is thoroughly well established.

H. W. Hill, M.D., St. Paul
Executive Secretary, Minnesota Public Health Association.

DISCONTINUANCE OF COMPATIBILITY TEST IN SERUM TREATMENT

To the Editor:—Numerous inquiries concerning compatibility tests, etc., have led us to offer the following suggestions for informal publication:

After consultation with reputable laboratory workers in Boston and New York, it was decided to discontinue the compatibility test of the donor's serum with the recipient's corpuscles. It would seem reasonable to believe that in all probability the donor's serum is so rapidly diffused and diluted in the blood stream that hemolysis and agglutination of a dangerous nature will not follow, whereas untoward reactions might result from introducing cells into a concentrated serum as in transfusion. Moreover, we have repeatedly given so-called "incompatible serums" to patients without the slightest untoward symptoms.

Further experience has led us to pool the serum from our donors. This simplifies the preparation and the administration of serum, and apparently gives more uniform results.

One of us, in a recent visit to New York, found physicians using 25 c.c. amounts of serum. Needless to say, in view of the serum therapy of "type" pneumonias, such dosage would hardly be expected to produce results. Our experience in the treatment of eighty cases points to at least 100 c.c., and as high as 200 c.c. of serum every eight hours, till results are obtained.

May we also suggest that the clinician must always be on the alert for a lobar pneumonia, due to a type pneumococcus, for which type serum might be useful.

L. W. McGuire, M.D., and
W. R. Redden, M.D., Chelsea, Mass.
Lieutenant-Commander and Lieutenant, Junior Grade, respectively, U. S. Navy.

CONTROL OF THE COUGH IN INFLUENZA

To the Editor:—For the past month I have been on epidemic duty with the United States Public Health Service. Most of the cases that I have seen that have developed pneumonia have been complicated with a most rebellious cough. This has been so common in my own experience and with those with whom I have discussed this epidemic that it has occurred to me that this cough might be one of the causative factors of the pneumonia, either by producing trauma in some part of the respiratory mechanism which acts as an infection atrium, or by so lessening the resistance of the patient through loss of sleep, pain and exertion that he readily picks up the pulmonary infection.

The cough at first seems to be only irritative, for the patient expectorates but little; usually, however, after coughing almost incessantly for two or three days, he begins to spit up fresh blood; in another twenty-four or forty-eight hours this has changed to a typical "prune juice" sputum, with a fever of from 103 to 104 and the physical findings of bronchopneumonia.

In all my cases the cough was controlled completely with diacetylmorphin, from $\frac{1}{12}$ to $\frac{1}{6}$ grain, as circumstances may require. I am sure that a cough that is causing a patient great pain or interfering with sleep should certainly be controlled.

This may be regarded as quite commonplace, but I have seen so many cases in which the cough had not been controlled that perhaps a reminder of a commonplace might prove a decided benefit to the patient.

In this connection let me add that I see many physicians using heavy cough syrups with but little effect on the cough and usually producing nausea and gastric irritation, thereby making proper feeding impossible. Diacetylmorphin in tablet triturate form produces no such side-effects and is always most effective in the control of the cough.

Harry H. Myers, M.D., Shelby, Ohio.

"ATTITUDE OF CHRISTIAN SCIENTISTS IN THE PRESENT EPIDEMIC OF INFLUENZA"

To the Editor:—"The churches in Boston were not ordered closed by health authorities—merely requested," writes Walter H. Van Zwoll to The Journal, November 9. What were the Eddyites waiting for? A club? Mr. Hoover's early requests for food conservation were accepted at once by a large proportion of the American people. The more definite regulations and prohibitions did not appear until some time later. This cheerful compliance was a source of marvel to the New York correspondent of *L'Illustration*, Paris, who thereupon made the flattering comment, "I have said not once but twenty times that this is the best disciplined nation on the face of the earth—a request from the top is all that is necessary."

According to Carl Ackerman, the Eddyites in Berlin also believed in food conservation, but for an altogether different purpose. Immediately after the outbreak of war they laid by in store provisions in such quantities as to cause comment. Evidently "The Lord will provide" was construed as implying that He helps those who help themselves. Even that cheapest form of altruism which expresses itself liberally in assurances that all is well was for the moment possibly adjourned in the hurry to respond to the motivation of the main chance.

C. B. Burr, M.D., Flint, Mich.

A SIMPLE BLOOD STAIN

To the Editor:—Being dependent on a rather uncertain source for distilled water suitable for use with Wright's or Jenner's blood stains, I have finally found a method with which both "power house" distilled water and tap water may be used with success. Neither waters are filtered before use.

Webster's "Diagnostic Methods," Edition 5, and Simon's "Clinical Diagnosis," Edition 9, give different methods of preparing and using Pappenheim's panoptic stain, and by combining parts of each formula and method I have hit on a stain that is quick, clean and reliable (so far) for blood.

From Simon I make up Giemsa stain thus:

Azur II-eosin	3.0 gm.
Azur II	0.8 gm.
Glycerin, U. S. P. IX	125.0 c.c.
Methyl alcohol, acetone free	375.0 c.c.

Dyes are ground up in the alcohol and added to the glycerin.

To 150 c.c. of the foregoing solution I add 100 c.c. of Jenner's stain (1.5:1) and use thus:

I fix blood smears by immersion in this stain in a Coplin staining jar for one minute, and transfer directly, without shaking or washing, to a Coplin jar containing water, and after from two to five minutes' immersion wash briskly for a few seconds and stand the slide on its end to dry. Blotting is admissible.

Specimens are clear of precipitates, and when distilled water is used a characteristic panoptic picture is shown. Both single and double solutions seem to be stable, the Jenner stain that I use having been compounded seven months ago.

No originality is claimed; but if this method helps some one on a hurry-up job of staining, I shall rest contented.

Frank W. Lacy, Fort Lyon, Colo.

DIPLOCOCCI AS A FURTHER STAGE OF INFLUENZA BACILLI

To the Editor:—I wish to address an inquiry to clinicians and laboratory workers in reference to a conclusion based on studies of influenza. Has it occurred to any worker to associate the gram-positive diplococcus usually found intracellularly and extracellularly with Peiffer's bacilli as a further stage of the bacillus? My investigations have led me to a tentative conclusion that such is the case, analogous to the relationship of the fusiform bacilli and spirochetes in Vincent's angina.

John Lear, M.D., Allentown, Pa.
Pathologist, Allentown Hospital Association.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

FOLLICULAR OPENING IN EXTERNAL EAR A REMNANT OF BRANCHIAL CLEFT

To the Editor:—A few times I have noted, in adults and in children, a structure that I have never seen named nor described. It is a crypt or follicle or glandular opening in front of the upper portion of the external ear. It has the appearance that a pin prick would have in an inelastic material. In some cases a thick secretion issues from it. It is sometimes bilateral, sometimes unilateral. I presume it is a vestigial organ, but would like to know more about it.

James W. Walker, M.D., Chicago.

Answer.—The condition which is referred to is spoken of in the literature as fistula auris congenita, and is a remnant of the first or second branchial cleft. The fistula is due to an incomplete closure of one of these clefts. There is no connection between the fistula and the middle ear nor with the development of the external meatus. Politzer says it is "a short blind sac lined with epithelium, secreting a milky fluid." The external orifice is situated about one centimeter above the tragus, and one to two centimeters before the helix. If the opening of the fistula becomes occluded the secretion of the sac is retained and it gives rise to a cystic swelling (branchial cyst). The contained fluid may become infected and form pus. Politzer has never observed a bilateral case. The fistula may be accompanied by other anomalies of the ear such as congenital deformities of the external ear.

As a rule, fistula auris congenita does not call for any treatment. If there is a retention cyst or an abscess due to a collection of degenerate epithelial matter, or if there is a foreign body which has gained entrance to the external orifice, the fistulous tract may be laid open and the lining epithelium curetted away.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arizona: Phoenix, Jan. 7. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.

Colorado: Denver, Jan. 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Delaware: Wilmington, Dec. 10-12. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

Florida (E): Jacksonville, Dec. 16-17. Sec., Dr. G. A. Munch, 1806 Franklin St., Tampa.

Florida (R.): Miami, Dec. 2-3. Sec., Dr. W. M. Rowlett, Citizens Bank Bldg., Tampa.

Hawaii: Honolulu, Jan. 6. Sec., Dr. J. R. Judd, Honolulu.

Illinois: Chicago, Dec. 9-11. Mr. F. C. Dodds, Supt. of Registration, Springfield.

Iowa: Des Moines, Dec. 10-12. Sec., Dr. G. H. Sumner, Capitol Bldg., Des Moines.

Louisiana: New Orleans, Dec. 2-4. Sec., Dr. E. W. Mahler, 730 Audubon Bldg., New Orleans.

Maryland: Baltimore, Dec. 10. Sec., Dr. J. McP. Scott, 137 W. Washington St., Hagerstown.

Minnesota: Minneapolis, Jan. 7-10. Sec., Dr. Thomas McDavitt, 741 Lowry Bldg., St. Paul.

North Dakota: Jan. 7. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.

Ohio: Columbus, Dec. 3-5. Sec., Dr. H. M. Platter, State House, Columbus.

Oklahoma: Oklahoma City, Jan. 7-8. Sec., Dr. J. J. Williams, Weatherford.

Pennsylvania: Philadelphia, Jan. 7-9. Sec., Mr. Nathan C. Schaeffer, State Capitol, Harrisburg.

Rhode Island: Providence, Jan. 2-3. Sec., Dr. B. U. Richards, State House, Providence.

South Dakota: Pierre, Jan. 14. Sec., Dr. P. B. Jenkins, Waubay.

Utah: Salt Lake City, Jan. 6. Corres. Sec., Dr. G. F. Harding, 405 Templeton Bldg., Salt Lake City.

Virginia: Richmond, Dec. 10-13. Sec., Dr. J. W. Preston, 215 S. Jefferson St., Roanoke.

Washington: Spokane, Jan. 7. Sec., Dr. C. N. Suttner, 415 Old Nat'l Bk. Bldg., Spokane.

Maryland Homeopathic Report

Dr. O. N. Duvall, secretary of the Maryland Homeopathic Board of Medical Examiners, reports that on Jan. 3, 1918, a graduate of the Hahnemann Medical College and Hospital of Philadelphia in 1917 was examined and passed, on July 6, 1918, two 1918 graduates from the same school were examined and passed, and on March 18, 1918, a graduate of the Detroit Homeopathic College in 1901 was licensed through reciprocity with Michigan.

Rhode Island October Examination

Dr. B. U. Richards, secretary of the Rhode Island State Board of Health, reports the practical and written examination held at Providence, Oct. 3-4, 1918. The examination covered 7 subjects and included 70 questions. An average of 80 per cent. was required to pass. Of the 5 candidates examined, 4 passed and 1 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Chicago College of Medicine and Surgery	(1916)	87.5
Harvard University	(1915)	83.6
Tufts College Medical School	(1917)	85.8
University of Vermont	(1918)	93.5
FAILED		
College of Physicians and Surgeons, Boston	(1910)	78.4

Texas Reciprocity Report

Dr. M. F. Bettencourt, secretary of the Texas State Board of Medical Examiners, reports that 43 candidates, including 6 osteopaths, were licensed through reciprocity since Jan. 1, 1918. Fourteen candidates, including 2 osteopaths, were granted verification licenses. The following colleges were represented:

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
University of Arkansas	(1915)	Arkansas
George Washington University	(1913)	Dist. Columbia
Atlanta College of Physicians and Surgeons	(1902)	Oklahoma
Chicago College of Medicine and Surgery (1916, 2)	(1917)	Illinois
College of Physicians and Surgeons, Chicago	(1893)	Oklahoma
	(1907)	Illinois
Hospital College of Medicine	(1907)	Kentucky
Tulane University	(1908)	Arkansas
University of Maryland	(1893)	Kansas
University of Minnesota College of Phys. and Surg.	(1912)	Minnesota
American Medical College	(1912)	Missouri
Beaumont Hospital Medical College	(1901)	Oklahoma
Kansas City College of Medicine and Surgery	(1917)	Connecticut
Kansas City Hahnemann Medical College	(1908)	Oklahoma
Kansas City Medical College	(1899)	Missouri
Missouri Medical College	(1898)	Oklahoma
National University of Arts and Sciences	(1917)	Missouri
University Medical College of Kansas City	(1898)	Kansas
Eclectic Medical Institute	(1869)	Kansas
Meharry Medical College	(1914) (1917)	Tennessee
Memphis Hospital Medical College	(1898) (1902)	Mississippi
	(1901) (1912,2)	Arkansas
Sewanee Medical College	(1907)	Oklahoma
Vanderbilt University	(1913) Kentucky; (1917)	Tennessee
University of Tennessee	(1889) Kentucky; (1893)	Arkansas
	(1914) Oklahoma; (1916)	Mississippi
University of West Tennessee	(1917)	Tennessee
Baylor University	(1916)	Oklahoma

Book Notices

Surgical and War Nursing. By A. H. Barkley, M.D., M.C., F.A.C.S., Lecturer at Good Samaritan Hospital Training School for Nurses. Cloth. Price, $1.75. Pp. 208, with 79 illustrations. St. Louis: C. V. Mosby Company, 1918.

A Textbook of Physiology for Nurses. By William Gay Christian, M.D., Professor of Anatomy, Medical College of Virginia, and Charles C. Haskell, M.A., M.D., Professor of Physiology and Pharmacology, Medical College of Virginia. Cloth. Price, $1.75. Pp. 168, with illustrations. St. Louis: C. V. Mosby Company, 1918.

Nursing in Diseases of Children. By Carl G. Leo-Wolf, M.D., Chief of Clinic for Sick Babies and Children for the Health Department of the City of Buffalo, N. Y. Cloth. Price, $2.50. Pp. 314, with 72 illustrations. St. Louis: C. V. Mosby Company, 1918.

Hygiene for Nurses. By Nolie Mumey, M.D., Lecturer in Hygiene, Chemistry, and Bacteriology, Logan H. Roots Memorial (City Hospital) Training School. Cloth. Price, $1.25. Pp. 160, with 75 illustrations. St. Louis: C. V. Mosby Company, 1918.

Essentials of Dietetics. A Textbook for Nurses. By Maude A. Perry, B.S. Cloth. Price, $1.25. Pp. 159. St. Louis: C. V. Mosby Company, 1918.

These books for nurses have been issued by the publisher in a uniform size and binding.

Dr. Barkley's experience in war nursing is based on service in the Spanish-American War and intimate acquaintance with eminent surgeons recently returned from the European battlefields. All of the illustrations of instruments were lent by a manufacturing house in Cincinnati. This book cannot be said to be an exceptional work.

Christian-Haskell's book on physiology is exceedingly brief, and at that probably not so brief as most nurses would have it. The chapter on the nervous system is quite technical. The others are good.

Leo-Wolf's book is very practical, quite complete and written in simple, direct language. After each chapter is a series of questions for review.

Mumey's book gives the merest outline of hygiene for nurses, and is extremely superficial.

Perry's is a solid work, giving the essentials of dietetics for nurses and following in many respects the book by Strouse and Perry on food for the sick. This book will be of distinct help to nurses.

Diseases of the Male Urethra, Including Impotence and Sterility. By Irvin S. Koll, B.S., M.D., F.A.C.S., Professor of Genito-Urinary Diseases, Post-Graduate Medical School and Hospital. Cloth. Price, $3 net. Pp. 151, with 123 illustrations. Philadelphia: W. B. Saunders Company, 1918.

After a short recapitulation of the anatomy of the male urethra and its appendages, the author gives a brief abstract of the history of gonorrhea. This is followed by a summary of the modern views on the bacteriology and pathology of gonorrheal urethritis. These chapters while a trifle too concise, contain all the leading points. In his presentation of the treatment of gonorrhea the author forestalls the opposition that most of his confrères probably will offer to some of his therapeutic suggestions by emphasizing that they represent his personal views derived from his individual experience. The notes on the endoscopic findings are the result of careful work, and are accompanied by excellent colored pictures. This cannot be said about the description and illustrations concerning the operations undertaken for the relief of the complications and pathologic sequelae of gonorrheal urethritis. The closing chapters deal along the usual lines with sexual impotence and sterility in the male.

Medicolegal

Jurisdiction Over Recruits Afflicted with Disease

(In re Traina (U. S.), 248 Fed. R. 1004)

The United States District Court, Eastern District of New York, in denying an application for a writ of habeas corpus, says that relator Traina applied for the writ, directed to the commanding officer at Camp Upton, who, it was said, held the relator without authority, in that the relator claimed to be afflicted with a disease which he alleged made necessary his discharge from further Army service. He based the application for habeas corpus, in the first place, on the provisions of the selective service act and the rules promulgated thereunder, which direct rejection and discharge from military service of men with diseases and organic troubles which he claimed were less severe than those from which he suffered. But it must be held that this court has no jurisdiction either to consider the physical or medical standards by which persons otherwise eligible are to be judged either for admission to or discharge from the National Army. Such matters are clearly within the jurisdiction of the local and district boards or the Army authorities themselves.

The relator also claimed that the general provisions of Section 1116 of the Revised Statutes of the United States, requiring recruits to be "effective and able-bodied," made it illegal to retain a man suffering from such physical disability in the military forces of the United States, and that this court had power, on a writ of habeas corpus, to enforce the discharge of any one so afflicted. But no authority was cited from which it could be inferred that the court had such general power over the military forces of the United States. Any determination that a person should no longer be retained in the Army must be sought at the hands of the Army itself, even if it be evident that refusal to discharge would be illegal (Section 1342, as amended by Act of Aug. 29, 1916).

More than this, if the decision by the military authorities is adverse to the applicant, the court has no jurisdiction, if that decision is within the jurisdiction of the military authorities to determine. It has always been held, and is believed to be the law, that all such jurisdiction is vested in the military authorities, and that they have complete control and discipline over a man until they see fit to discharge him, if he has been lawfully brought into the service, and if the military authorities have not gone outside of the jurisdiction given them by statute, in administering the affairs of their own commands.

Requiring Drafted Person to Submit to Operation

(De Genaro v. Johnson (U. S.), 249 Fed. R. 504)

The United States District Court, Eastern District of New York, says that relator De Genaro, who applied for a writ of habeas corpus, was in the National Army at Camp Upton. He claimed to be suffering from hernia, and raised the contention that both the local board and the examining officers of the Army at Camp Upton were aware of this physical disability, even though the examination by the medical examiners of the local board, and the further examination at Camp Upton, did not result in his rejection for physical disability. In general, the case was like that of Traina, 248 Fed. R. 1004, in which it was held that the selective service law and sections 1116 and 1342 of the Revised Statutes of the United States make the decision of the examining board final so far as an application to the court by way of habeas corpus is concerned. But relator De Genaro raised a further point, as to which no decision seems to have been rendered. He alleged that the physical examination at Camp Upton resulted in his being ordered to undergo an operation to relieve him from the hernia complained of. He refused, and still refused, to submit to this operation, and in consequence of this refusal applied to this court for release through a writ of habeas corpus, alleging that the Army had no authority to hold him, inasmuch as they could not compel him to submit to the operation, and as he was therefore within the class of persons who are entitled, on physical examination, to be discharged from further military service.

It is evident that the unwillingness of the relator to submit to an operation could be used by a person so disposed as an excuse for further escaping military service, even though he might be willing and anxious to have the operation performed under ordinary circumstances. In any such case the court should not act directly in contravention of the provisions of the selective draft law, by which the findings of the boards and their examiners are final on such questions. The ordinary provisions of the military law then apply, and must be construed in connection with the laws under which the National Army has been created; but if a person were admittedly found to be physically disabled, by an examining board of the Army, and if the Army authorities should refuse to discharge him, for purely arbitrary or disciplinary reasons, the courts have no authority to take testimony, examine into the man's physical condition, on a hearing, and discharge him as held without authority of law, even if the facts appeared as he alleged. The writ must be dismissed, and the relator remanded.

Unconstitutional Laws Providing for Sterilization

(In re Thomson et al. (N. Y.), 169 N. Y. Supp. 638. Haynes v. Lapeer Circuit Judge (Mich.), 166 N. W. R. 938)

The Supreme Court of New York, Special Term, Albany County, in re *Thomson and others,* composing the board of examiners of feebleminded criminals and other defectives, reverses the board on its determination to perform vasectomy on one Frank Osborn, an inmate of the Rome Custodial Asylum, 22 years of age, strong physically, who had been an inmate of that institution for several years, and who was in the class known as feebleminded, and the court grants him an injunction restraining the carrying out of the determination of the board, because the court holds that Chapter 445 of the Laws of New York of 1912, amending the Public Health Law by adding Article 19 thereto, in relation to operations for the prevention of procreation, is unconstitutional. The court says, among other things, Can it be said that the law can direct the physical mutilation of the bodies of those who are in the state's care, and not be concerned with the same class of persons who are in the world at large? It seems clear that Frank Osborn is not given the equal protection of the laws, having in mind many others situated as he is who are not within the walls of a public institution, to which equal protection he is entitled with them. There is afforded to the young man similarly situated as to his physical and mental make-up, who is cared for by his parents in his own home, whose sexual tendencies and capacity may be the same as Osborn's, the protection of the law, which makes it a misdemeanor for any person to assist or take part in the operation of vasectomy on such a subject, while Frank Osborn, because he is an inmate of a state hospital, is not only not protected, but he is subject to such operation without his consent when determination is reached by the board created under this statute. The state has power, many times sustained by the courts, to protect the health, morals and welfare of the people, but such protection cannot be afforded unless it applies to all alike.

The Supreme Court of Michigan, in the case of *Haynes,* Superintendent of Michigan Home and Training School, v. *Lapeer Circuit Judge,* denies the plaintiff a writ of mandamus to review and reverse an order of the circuit court sustaining an order of the probate judge, refusing to entertain jurisdiction on the plaintiff's petition for a hearing to determine the question of the sanity of an alleged incompetent named Nora Reynolds, confined in the Michigan Home and Training School at Lapeer, and the necessity of performing on her the operation of salpingectomy, under the provisions of Act 34 of the Public Acts of 1913, on the ground that the act is unconstitutional. The court says that the only question argued or raised in this proceeding against the validity of the law being that it was capricious and discriminating class legislation, there was no occasion to dwell or pass on any suggested underlying medicolegal questions to which the indicated purpose of the law points and which within constitutional limits are for legislative rather than judicial consideration. The court is constrained to concur in the opinion of the circuit judge that this law as framed does not afford, in its scope, those affected by it that equal protection under the laws guaranteed by the constitution, and so limits the class of defectives covered by its provisions as to be clearly class legislation without substantial distinction within constitutional inhibition. What logical connection with the object sought by this enactment has a classification which carves a class out of a class and applies the proposed curative treatment, which it is found the public weal demands and justifies, only to those of the type requiring such exclusive legislation who, by reason of their sequestration under public control, are presumably helpless to work on those now in being or posterity the mischief which the law is framed to eliminate? In this enactment the legislature selected out of what might be termed a natural class of defective and incompetent persons only those already under public restraint, leaving immune from its operation all others of like kind to whom the reason for the legislative remedy is normally and equally, at least, applicable, extending immunities and privileges to the latter which are denied to the former.

Period Employer Must Furnish Medical Services

(In re McKenna (Maine), 103 Atl. R. 69)

The Supreme Judicial Court of Maine holds that in a case in which a claimant under the workmen's compensation act received her injury on September 11, and the industrial accident commission found that "disability" began on September 18, the commission erred in holding that the date of the accident would be considered as of September 18, and ordering that medical bills, not exceeding $30, covering the fourteen days following September 18, be paid by the employer. The court says that the plain language of the statute restricts the period during which the employer must furnish medical services, etc., to the first two weeks "after the injury," and, while the act is remedial and to be broadly construed, the court finds no authority for the substitution for the word used in the statute of another term used in the same statute with a clearly different meaning. If it is desirable to change the period during which medical services shall be furnished, or to extend the powers of the commission in that regard, legislative action should be had, as was done in Massachusetts. Nor does the court consider that such a rule as that adopted by the commission is necessary to carry out the legislative intent. Its evident purpose was to allow no compensation in the nature of wages for the first two weeks after the injury, at least when the incapacity is partial, and during those two weeks to allow as compensation to the injured employee his medical expenses, to the end that the latter might not for reason of economy delay seeking medical advice, even though the injury might be slight and not immediately incapacitating.

Competent to Give Opinion on Mental Condition

(Monahan et al. v. Roderick et al. (Iowa), 166 N. W. R. 625)

The Supreme Court of Iowa holds that the fact that it appeared in a contest over a will that the physician who had attended the testatrix was not a specialist in mental diseases would not necessarily destroy his expert character, and did not disqualify him from expressing his opinion on the mental condition of the testatrix. The court says that the boundaries of the field of expert knowledge are somewhat indefinite. There are varying degrees also of expert knowledge on any subject. A regular practicing physician is usually regarded as expert, at least to some extent and for some purposes. The court sees no reason to say that he is not qualified as such to give an opinion as to the feebleminded condition of the patient under his care. It was unimportant that the question in this case asked the opinion of the witness whether the mind of the testatrix was sound, and did not ask whether it was unsound, although the trial court seemed to think that the first form of question was proper while it would not have been proper to ask the witness for an opinion whether the mind of the testatrix was unsound.

Society Proceedings

COMING MEETINGS

American Assn. for S. & P. of Inf. Mort., Chicago, Dec. 5-7.
American Physiological Society, Baltimore, Dec. 30-Jan. 1.
American Public Health Association, Chicago, Dec. 9-12.
Medical Association of Porto Rico, Ponce, Dec. 14-15.
Society of American Bacteriologists, Boston, Dec. 30-Jan. 1.
Southern Medical Association, Asheville, N. C., Nov. 11-14, 1918.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Sixty-Eighth Annual Session, held at Philadelphia, Sept. 23-26, 1918

(Continued from page 1691)

Absence of Clinical Symptoms During Preperforated Stage of Duodenal Ulcers

Dr. Levi J. Hammond, Philadelphia: Of fourteen patients operated on during the past two years at the Methodist Episcopal Hospital for perforated duodenal ulcers, not even the frequent complaint of digestive disorder is noted in the histories as occurring during their latent period. In none of them was complaint made of such symptoms as paroxysmal pain, localized tenderness, vomiting, hematemesis, or hyperacidity of the gastric juices. None of the patients were chlorotic or anemic and there was no history of burns or scalds or other serious accidents that could have been a factor in etiology. In most instances the perforations occurred while the patients were at their usual occupations. In one, perforation occurred during the middle of the night while the man was asleep in his bed.

DISCUSSION

Dr. M. Behrend, Philadelphia: It is my experience that many cases of perforation give no symptoms. These cases usually occur in men. They are working and are suddenly seized with terrific pain that overcomes them and the perforation has occurred. On close questioning of these patients a history of gastric disturbance, commonly called "indigestion," is usually received.

Dr. John J. Gilbride, Philadelphia: It is not uncommon to have cases of perforation without any preperforative symptoms. Vomiting and hemoptysis are rare in duodenal ulcer. About the only symptom one could tie to would be pain. Hyperacidity is not at all diagnostic. Finding occult blood in the stool may be of value .

Dr. Donald Guthrie, Sayre, Pa.: I have endeavored to find out whether there is any change in the symptoms during which the perforation occurred and the symptoms that all the patients complain of, but even by asking the most direct leading questions it is impossible to elicit any early ulcer history.

Postoperative Sequelae of Acute Appendicitis

Dr. John B. Deaver, Philadelphia: In 1,700 operations for acute appendicitis there were sixty-six deaths, a mortality of 3.7 per cent. The series included all cases of acute appendicitis with and without preoperative complications directly due to the condition of the appendix or to the involvement of other viscera. Of the complications, fecal fistula occurred in forty-two cases, secondary abscess in thirty and intestinal obstruction in twenty-seven cases. An analysis of the cases of obstruction shows that fully 70 per cent. required drainage at the original operation. There is no doubt that in every case of acute appendicitis requiring drainage operation was delayed beyond the most favorable moment. In the prevention of surgical complications there is nothing more important than to forestall the formation of pus within the peritoneal cavity. A large number of these cases would not have developed adhesions and consequent obstruction if the original appendicular disease had been treated early and no drainage had been required.

DISCUSSION

Dr. H. J. Donaldson, Williamsport: To the post operative sequelae mentioned I wish to add acute renal insufficiency, acute gastric dilatation, and hemorrhage from erosion of drainage tubes. Of the fecal fistula group my experience leads me to believe that the causes are gangrene of the base of the appendix involving some area of the cecum, failure to remove the appendix, erosion of the intestines by the drain and ulcer of cecum due to thrombosis of the blood supply, or extension of gangrenous process. To overcome this occurrence, it has been my habit always to remove the appendix, to free the adhesions to admit of invagination of the cecal wall if gangrenous, and to effect an early change in the position of my drainage to prevent pressure on the bowel or large blood vessels and other important structures. One of the greatest lessons I ever had in drainage tube accidents was the sudden death of a man rapidly recovering from a general peritonitis, who on the seventh day developed a hemorrhage from his iliac artery and died in a few minutes.

Wounds of the Joints, with Especial Reference to Splintage

Lieut.-Col. Robert B. Osgood, M. C., U. S. Army, Boston: in any serious engagement, we may expect nearly one half of the severe injuries to involve the bones and joints and among these, the phenomenon of shock is very common. Shock is of first concern and infection is a close second. Perhaps the most common cause of shock is trauma. Infection feeds first on traumatized tissue. Transport must always add trauma to trauma already existing. It becomes the first duty of the surgeon to lessen this trauma by every possible means. Proper splinting materially lessens it. Therefore, proper splinting becomes of first concern. The first essential in good splinting for transport is the comfort of the wounded man. If the splint gives him ease from his wound pain and does not add another discomfort, the first requisite is met. The splints must also fulfil the mechanical purposes for which they are applied. The design of the splints must be simple and their weight light, in order that they may be manufactured in large quantities and be transported easily far up the line to the battalion aid posts. For fractures of the long bones and certain joint injuries it is extremely desirable that they embody the two principles of fixation and traction: Fixation, to protect the injured structures and to retain proper alinement after the alinement has been secured; traction, to bring about muscular relaxation with the object of diminishing pain by inhibiting involuntary contraction, which also results in malposition.

DISCUSSION

Capt. Roades Fayerweather, M. C., U. S. Army, Washington, D. C.: The importance of splinting cannot be emphasized too much. It is the first form of specialized treatment that the soldier with a bad fracture receives, and frequently very soon, if not immediately, after his injury. This treatment must frequently be applied by men who have had no experience in medical or surgical work, that is by the corps men, therefore, these methods should be simple and capable of routine application. Every surgeon in the expeditionary force must be his own orthopedic surgeon. It is impossible for the orthopedic surgeon to be in attendance on all these cases; hence the surgeon handling these cases must look on them with an orthopedic eye. He must look to the functional result; he must learn to use these splints and he can do so very easily because of their simplicity.

Lieut.-Col. Robert B. Osgood, Boston: In the aftermath of cases coming through England, 30 to 50 per cent. of the cases of deformity filling the military hospitals represents the preventable deformities.

Combating Septicemia with Arsphenamin

Dr. Samuel R. Haythorn, Pittsburgh: Arsphenamin was administered in twenty-nine cases of proved septicemia with seventeen recoveries and twelve deaths. The treatment proved beneficial when used early in septicemias if they were associated with primary foci which were easily accessible to surgical interference. In endocarditis and other conditions in which secondary localizations had become firmly established, arsphenamin was disappointing because it did not affect the localized lesions on the heart valve but appeared to be effective only in the blood stream.

DISCUSSION

Dr. Harold A. Miller, Pittsburgh: We have used arsphenamin in fourteen cases. In none did we get any untoward symptoms which we could attribute to the arsphenamin. We have found no contraindications in puerperal sepsis for the use of arsphenamin that are not also contraindications in syphilis or other diseases. In every instance but one in which we gave the arsphenamin we were able to demonstrate a negative blood culture. The patient was a woman with a vegetative endocarditis. In every instance in which the remedy was given before there was a localized area of infection there was a temperature drop in the way of crisis within twenty-four hours. A daily leukocyte count was taken to determine the indication for repeating the dose. In the very virulent cases the leukocyte count was very low in comparison with the illness of the patient. Following the administration, the leukocyte count would increase to 32,000 within from twenty-four to forty-eight hours. In our series one patient died of streptococcic pneumonia, one of multiple abscess of the kidney and one of peritonitis. In our ultimate results we found no untoward effects.

Dr. Grover C. Weil, Pittsburgh: In a case of staphylococcic septicemia resulting from a compound fracture following considerable traumatism of the wounded surface with fluctuation of temperature between normal and 101 F. for five weeks, the temperature was normal in five days following the administration of arsphenamin and five days later the staphylococci had disappeared from the blood. The man subsequently regained his weight, and in three weeks following the first administration of the arsphenamin there was almost complete union of bone.

Dr. S. R. Haythorn, Pittsburgh: Following the administration of arsphenamin, an increase in the number of leukocytes was a constant finding. The importance of repeated blood cultures should be emphasized, particularly in the presence of persistent fluctuating temperature. The results in the treatment of endocarditis were discouraging, but Zinsser observes that endocarditis is a secondary infection of the heart valves, and that the vegetations on them act as localizations, from which bacteria may be poured into the blood stream continually. While not arguing that arsphenamin is an ideal drug for the treatment of septicemia, we hope by its careful use to reduce the mortality in blood stream infections.

Physical Examination in the Diagnosis of Early Pulmonary Tuberculosis

Dr. Louis V. Hamman, Baltimore: When 100 men come before us for examination, we know that at least seventy have pulmonary tuberculosis. Of the seventy with signs of pulmonary change, only four or five will develop the disease. Nothing can be more important than to distinguish between tuberculous infection and tuberculous disease. It is impossible to put an absolute value on the physical examination in the diagnosis of pulmonary tuberculosis. It really takes its value from the relations of all the other associated clinical facts. One exception to this statement is in favor of râles. When definite moist râles are limited to an apex this is an almost absolute indication of pulmonary tuberculosis, provided the general evidence points to the presence of the disease. This conclusion may be drawn safely even though at the time of examination the usual symptoms of tuberculous disease are absent. In this important emphasis I mean definite unmistakable fine moist sounds heard at an apex, and not the many adventitious sounds which so frequently puzzle the adept and mislead the novice. So far as tuberculosis is concerned in the war problem, not only the obviously tuberculous should be excluded from active service, but those likely to develop the disease from exposure incident to camp life.

DISCUSSION

Dr. Elmer H. Funk, Philadelphia: Physical signs are valuable only as emphasized by the consideration of history and symptoms. Far more important is the determination whether the disease is clinically active or clinically inactive. We must learn what from the roentgen ray point of view constitutes a normal chest.

Dr. Charles H. Miner, Wilkes-Barre: The most important question is the relation between the extent of the pulmonary changes not due to active disease and the probability of developing active disease under conditions of unusual exposure. Nearly 3 per cent. of 5,945 measles patients have developed tuberculosis. There are many occupations with less exposure and in which the risks to a tuberculous individual are much less than in the trenches.

Dr. Thomas McCrae, Philadelphia: The view expressed by some that the man in the Army is not much exposed to infection is of doubtful accuracy. Regarding pensions, if the Army accepts a man who later is found to have tuberculosis, it seems reasonable that he should be pensioned by the government. I would put as the first consideration of useful points in diagnosis the fact that suspicion is aroused. It is then our business to exclude the possibility, rather than to take the view, for example, that the condition is nothing but bronchitis.

Essential Hypertension

Dr. Herman O. Mosenthal, Baltimore: It is important to recognize this disease, which thus far is characterized by the presence of only one symptom, namely, hypertension. There is no pathologic physiology of the organism of which we are aware that brings about hypertension. It exists in a great number of individuals and usually results in severe lesions of the heart, brain or kidney which cause death. The diagnosis can be made with certainty only when the tests for renal function are available. Treatment involves some of the most intricate questions in metabolism. The effective treatment is prophylaxis. Mental and physical rest seem to constitute the main element in the successful treatment. A diet regulating quantity rather than quality that the heart efficiency may not be interfered with by the distended stomach and that obesity may be forestalled or diminished, accomplishes as great results as are possible through food control. Attention to hygienic instructions may often prolong life to a considerable degree.

DISCUSSION

Dr. James M. Anders, Philadelphia: Essential hypertension is of great importance because these cases usually terminate in serious cerebral, arterial, cardiac and renal developments. That very fact should make us reserved in classifying the condition as a separate disease entity. The condition, in my experience, is by no means as frequent as certain writers would have us believe. Clinicians have failed to exclude cases in which some cause of hypertension could have been found with sufficiently thorough investigation. We are not justified in making a diagnosis without resort to the tests for renal function. Such tests have revealed insidious developments in the kidney structure, showing that cases of apparent essential hypertension could not be regarded as such. Many of the cases of persistent hypertension in middle aged men in active business given to the pleasures of the table and to excesses in alcohol and tobacco, in my experience, yield to treatment, prolonged rest and correction of the habits of the patient, and should not be classified as belonging to this clinical group of true essential hypertension.

Dr. Ross V. Patterson, Philadelphia: An important group of cases of hypertension must be distinguished from the much more common forms due to renal sclerosis, a condition in which the hypertension is the primary change, and in which the changes in arteries and slight changes in kidneys are secondary but with decrease of hypertrophy of the heart. The difference in clinical course is important; also the difference in management, prognosis and treatment. When sclerosis of the kidney is a primary factor renal functional tests are essential to diagnosis of hypertension.

Dr. Francis Ashley Faught, Philadelphia: It is my firm opinion that the renal function test has very little value; it does not differentiate between a temporary congestion of the kidney and chronic kidney disease, and is, therefore, absolutely useless in the study of a condition of this kind which is the borderline between health and disease. Cases of essential arteriohypertension exist and probably have a cause, which is toxic. If such cases do not exist too long as temporary conditions, they are amenable to relief and cure.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Public Health

October, 1918, 8, No. 10

1 *Convalescent Human Serum Treatment of Influenza Pneumonia. L. W. McGuire and W. R. Redden.—p. 741.
2 Centralized Health and Relief Agencies in Influenza Epidemic. E. R. Kelley and B. W. Carey, Boston.—p. 744.
3 *Open Air Treatment of Influenza. W. A. Brooks.—p. 746.
4 Epidemiology and Bacteriology of Influenza. C. A. Darling, Meadville, Pa.—p. 751.
5 *Use of Influenza Vaccine in Present Epidemic. T. Leary, Boston.—p. 754.
6 Modern Advertising and Nostrum Evil. A. J. Cramp, Chicago.—p. 756.
7 Effect of Putrefactive Odors on Growth and on Resistance to Disease. C. E. A. Winslow and D. Greenberg, New Haven.—p. 759.
8 Suggested Modifications of Standard Method for Study of Dust Content of Air. H. F. Smyth, Philadelphia.—p. 769.
9 Chlorination of Chicago's Water Supply. J. Ericson, Chicago.—p. 772.
10 Birth Registration in Connecticut. J. P. Balfe, Hartford.—p. 776.

1. **Convalescent Human Serum Treatment of Influenzal Pneumonia.**—The observation and treatment by McGuire and Redden of over 400 cases of influenzal pneumonia in the Chelsea Naval Hospital has afforded opportunity to compare various methods of treatment with a fair degree of accuracy. The use of serum from convalescent influenzal pneumonia patients was first tried on two patients with a very severe and extensive bronchopneumonia. The result was very encouraging and led to its further use. Thirty-seven patients have been treated with serum. Thirty are convalescent; six are under treatment; one dead. Of the six under treatment, two are much improved; two have received only one injection of serum; two not improved, one of whom is critically ill. Of the thirty convalescents, eight received treatment on the second day of the pneumonia; fifteen on the third day; four on the fourth day; three on the sixth day. Of the six under treatment, three received serum on the second day; two on the third day, and one on the fourth day. The patient who died received the first serum on the fifth day. Convalescent patients were bled as soon as convalescence was well established, the majority within a week or ten days of a drop to normal temperature. The serum was given as early as the diagnosis of the pneumonia complication could be made, so there has been no doubt about the lung involvement.

The dose of serum has varied from 75 to 125 c.c. intravenously and the interval between doses has varied from eight to sixteen hours. Treatment was continued until there was no doubt about the recovery of the patient. The majority of patients received about 300 c.c. Three received only 100 c.c. and two received from 600 to 700 c.c. It was found that there was a marked difference in the potency of the convalescent serum. At least ten out of seventy serums had no effect on patients. Under these conditions the succeeding doses of serum were from other patients. Results from this serum are usually obtained in the first twenty-four hours after its use. If no results are obtained in this time, the serum from another donor should be used. An attempt was made to judge the potency of the serum by the amount of lung involvement.

Wassermann tests were made on all donors as soon as possible in order not to waste time on bleeding those who showed a positive reaction. Compatibility tests of donors' serum, with recipients' corpuscles, was made as soon as new cases appeared on the ward. Then usually ten to fifteen serums were tested against the corpuscles of each recipient in order to have plenty of available serum for complete treatment. Blood to the amount of about 800 c.c. was taken from each donor, under sterile precautions; 400 c.c. at a time on two successive days. Thus each donor yielded about 300 c.c. of serum. The blood was allowed to clot at room temperature for about an hour, then plate cultures were made, and the containers placed on ice over night. The separated serum was cleared by centrifugalizing at high speed; then bottled, and in most cases given the same day. Tricresol (0.30 per cent.) was used only in serum kept over twenty-four hours. Only four patients had chills after the serum injections. All of these received serum containing tricresol, while three others receiving tricresolized serum gave no such reaction. At no time has a donor been inconvenienced by the withdrawal of the above amount of blood. Experience shows that the most beneficial results will be obtained by giving the proper serum within the first forty-eight hours of the pneumonia complication. The authors are convinced that the serum from convalescent influenza pneumonia patients has a decided influence in shortening the course of the disease and in lowering the mortality.

3. **Open Air Treatment of Influenza.**—Brooks calls attention to the fact that there is apparently great opposition to open air treatment among many of the medical fraternity. Many seem inclined to think that if the windows of a room are open the same object is attained. Many think that the ordinary sun parlor of a hospital is "just as good." The facts are, however, that the patients do not thrive as well in any ordinary hospital, no matter how well it is ventilated, as they do when they are put right out into the open. The objection to the sun parlor is that one gets direct sunlight only during part of the day, whereas the patient who is out in the open gets the direct sunlight all day long. Brooks reports his experience in the treatment of influenza in tents. The efficacy of open air treatment has been proved, Brooks says, and one has only to try it to discover its value. His paper represents the result of study by twelve or fourteen men, who, for a month, practically devoted their entire time to the treatment of influenza and its complications.

5. **Use of Influenza Vaccine in Present Epidemic.**—Three strains of influenza bacilli obtained from cases during the present epidemic have been used by Leary in the manufacture of vaccine. The prophylactic dose has been 0.5 c.c., 1 c.c. and 1.5 c.c. in three doses at twenty-four hour intervals. The therapeutic dosage has been 0.5 c.c. every twelve hours. Leary suggests that it is probable that all of these doses are too small, notably the therapeutic dose. The percentage of complete protection appears to be high, and there is marked amelioration of symptoms in those who become ill, and pneumonias appear in very few cases. The therapeutic use of vaccines was followed by the best results when large doses were exhibited early in the disease. Leary thinks it should be possible to abort a large percentage of the cases, and prevent the development of pneumonia. After pneumonia has developed, large doses of vaccine have produced excellent results.

Boston Medical and Surgical Journal

Oct. 31, 1918, **179**, No. 18

11 *Fatigue as Contributory Cause of Pneumonia. W. N. Cowles, Boston.—p. 555.
12 Two Infections Caused by Single Carrier. D. M. Lewis, New Haven, Conn.—p. 556.
13 Radium Therapy in Hyperthyroidism with Observations on Endocrinous System. W. H. B. Aikins, Toronto.—p. 558.

11. **Fatigue as Contributory Cause of Pneumonia.**—This investigation was made at the Groton School for Boys at Groton, Mass. The kind of fatigue observed as a cause of pneumonia at this school, Cowles says, is an acute fatigue, due to violent exercise like rowing or running in competitive sports and not mere weariness from everyday activities. The observed instances in which acute fatigue was followed by pneumonia were in boys already subject to, or convalescent from, mild respiratory infections and presumably easily tired. That acute fatigue was a contributing cause of pneumonia at Groton, seems more than suggested. Pneumonia was confined to boys given to athletic tasks and sports. Between 4 and 5 per cent. of them had it each year for three years. It came to an end when boys ailing or convalescent were shielded from fatigue. The persons associated with the boys in the school and the high school pupils, near by, limiting themselves to everyday activities, did not have pneumonia. Cowles points out that this investigation suggests the operation of the same contributing cause of pneumonia in army camps and elsewhere, and that the disease may be lessened by similar measures against fatigue in persons out of condition.

Georgia Medical Association Journal, Atlanta

September, 1918, **8**, No. 5

14 Plastic and Cosmetic Surgery. E. D. Highsmith, Atlanta.—p. 91.
15 Recent Developments in Laboratory Diagnosis. E. C. Thrash, Atlanta.—p. 94.
16 Prostatectomy in Two Stages. W. L. Champion, Atlanta.—p. 95.
17 Earache and Deafness. A. B. Mason, Waycross.—p. 99.
18 Cholecystitis Papillomatosa Malignum. T. P. Waring, Savannah.—p. 105.

Indiana State Medical Association Journal, Fort Wayne

October, 1918, **11**, No. 10

19 Indiana Physicians and the War. J. R. Eastman, Indianapolis.—p. 359.
20 Medical Profession in the War. F. Martin, Washington, D. C.—p. 361.
21 Surgeons of Civil War. G. W. H. Kemper, Muncie.—p. 367.
22 Indiana in the War. M. F. Foley, Indianapolis.—p. 369.

Journal of Experimental Medicine, Baltimore

November, 1918, **28**, No. 5

23 Acid Production Graphically Registered as Indicator of Vital Processes in Cultivation of Bacteria. A. Fischer, Copenhagen, Denmark.—p. 529.
24 *Experimental Chemical Pneumonia. M. Wollstein and S. J. Meltzer, New York.—p. 547.
25 Effect of Intrabronchial Insufflation of Solutions of Some Inorganic Salts. M. Wollstein and S. J. Meltzer, New York.—p. 551.
26 *Spirochetal Flora of Normal Female Genitalia. H. Noguchi and and D. J. Kaliski, New York.—p. 559.
27 Comparative Study of Experimental Prophylactic Inoculation against Leptospira Icterohemorrhagiae. H. Noguchi, New York.—p. 561.
28 *Specific Poison in Liver Extracts of Rabbits Inoculated with Typhoid and Prodigiosus Bacilli Intravenously. J. T. Parker, New York.—p. 571.
29 Improvement in Method of Isolating and Recovering Bacillus of Cattle Abortion Through Guinea-Pigs. E. W. Smillie, Princeton, N. J.—p. 585.
30 *New Thoracic Murmurs Heard with Two New Instruments, Refractoscope and Partial Stethoscope. F. D. Parker.—p. 607.
31 New Type of Syringe, Especially Adapted for Intravenous Injections or Aspiration of Blood. J. H. Brown, Princeton, N. J.—p. 623.
32 *Experimental Hemochromatosis. P. Rous and J. Oliver, New York.—p. 629.
33 *Urinary Siderosis. Hemosiderin Granules in Urine as Aid in Diagnosis of Pernicious Anemia, Hemochromatosis, Other Diseases Causing Siderosis of Kidney. P. Rous, New York.—p. 645.
34 Rapid Differential Method for Isolation of Bacillus Influenzae. J. H. Brown and M. L. Orcutt, Princeton, N. J.—p. 659.

24. **Experimental Chemical Pneumonia.**—Wollstein and Meltzer produced lobar pneumonia in dogs by means of intrabronchial insufflation of a broth culture of a highly virulent pneumococcus Type I, invariably leading to a fatal termination. The pneumococcus insufflated was recovered in pure culture from the solid lung area and the blood of the heart. The next step was to apply chloramin-T solution to the inoculated lung. The plan was to introduce 5 c.c. per kilo of body weight of a 1:10,000 solution intrabronchially two hours after the culture was given, and if the animal survived until the next day or longer, to repeat the injection. Six animals with the experimentally induced pneumonia were given the chloramin-T solution; they were controlled by three untreated dogs. One animal received four, another three, and two others two treatments, while two died after the first dose. Instead of a therapeutic action, the effects of the treatment were rather to intensify the pathologic process. Moreover, death resulted, as a rule, more quickly in the treated than in the control animals.

26. **Spirochetal Flora of Normal Female Genitalia.**—The results of examinations of the smegma, films, and washings of the genital mucous membranes of normal adult females demonstrated that the number of spirochetes of the female is much greater than that of the adult male, although the varieties present appear to be identical in both. As in the male smegma, *Treponema calligyrum* is encountered here also as the predominating variety in the majority of specimens, while *T. minutum* is present almost constantly but in fewer numbers. The coarse *Spironema refringens* has been found less frequently here than in male smegma.

28. **Specific Poison in Liver Extracts of Rabbits Inoculated with Typhoid and Prodigiosus Bacilli.**—The experiments described by Parker make it probable that part, at least, of the intoxication produced in rabbits by injections of *B.*

typhosus or *B. prodigiosus* is due to liver poisons of the nature of those dealt with here and which appear to be yielded to the blood by the liver, and then absorbed by the various tissues. Rabbits actively immune to *B. typhosus* or *B. prodigiosus* exhibit a condition of resistance apparently because of having acquired in the process of immunization a tolerance to the liver poison. For it is possible that even if several lethal doses of the bacteria are injected into the immune animal, not more than one lethal dose of the liver poison is produced in a unit of time, an amount which the immune animal can tolerate readily. Whether a similar poison is generated in typhoid in man is a question, Parker says, that cannot now be answered. It seems not impossible that it may play a part in causing the symptoms of toxemia in that disease.

30. **New Thoracic Murmurs Heard with Refractoscope and Partial Stethoscope.**—With these instruments the following facts have been determined by F. D. Parker. The sounds heard through the refractoscope and through the partial stethoscope are different in many respects from those heard in ordinary auscultation. There exist "sound shadows," and of these there are two varieties, respiratory sound shadows and cardiac sound shadows. Heart sounds appear to take on the characteristics of chamber sounds in a degree greater than has been realized; and dilated hearts with poor muscle respond to more harmonics than does muscle with better tonus. The so-called third heart sound, noted by many observers and discussed by both Barie and Thayer, does exist as a true heart sound. It is the sound produced during auricular systole and is heard best at the apex.

There is a cardiac sound which Parker calls the "outflow" sound. The heart is a tube with resonant walls. These walls are set in vibration: (1) while the heart is filling; (2) when the auricle contracts; (3) when the ventricle contracts, thus causing the valves to vibrate; (4) while the ventricle is being emptied; (5) when the semilunar valves close. The flow of blood into the heart is too gentle to cause vibrations sufficient to give rise to audible sound. The second or auricular vibration causes the sound of Barie and Thayer. The third sound is that now termed clinically the first sound. The fourth is Parker's outflow sound. The fifth is the so-called second sound. The outflow sound is heard between the first and second valve sounds of the heart. During this period the outflow sound does not appreciably vary in intensity, but it noticeably rises in pitch. When the ventricle shoots its considerable mass of blood into the great arteries, it is probable that the rushing flood would set the elastic walls in vibration. The outflow sound cannot be a continuation of the so-called first sound, because the intensity of the outflow sound does not perceptibly diminish. In all sounds emanating from the thorax the pleaurae are in a state of vibration. Some sounds produced in the more remote parts of the chest are brought to a focus in the apex of the lungs.

32. **Experimental Hemochromatosis.**—In rabbits destroying transfused blood constantly during a period of many months a pronounced and widespread siderosis ensues, practically identical with that characterizing human hemochromatosis. The findings do not indicate the ultimate cause of this disease, but they throw light on its various features and its course, and suggest a means for its diagnosis.

33. **Hemosiderin Granules in Urine as Aid in Diagnosis of Diseases Causing Siderosis of Kidney.**—In diseases which bring about a siderosis of the kidney, there are ordinarily present in the urinary sediment cells containing granules of hemosiderin, and often many free granules as well. The finding has proved useful in the diagnosis of hemochromatosis and Rous suggests that it will probably be of service in the recognition of pernicious anemia, and possibly some other diseases. The fact should be emphasized that urinary siderosis is the indication of a renal condition, not of a disease.

Journal of Infectious Diseases, Chicago

November, 1918, **23**, No. 5

35 Normal Agglutinins for Different Kinds of Pathogenic Bacteria in Serum of Cold Blooded Animals. M. Takenouchi, Chicago.—p. 393.
36 Cytolytic Action of Normal and Immune Serum on Infusoria. M. Takenouchi, Chicago.—p. 396.
37 Lysis and Agglutination of Red Corpuscles of Warm Blooded Animals by Normal Serum of Cold Blooded Animals. M. Takenouchi, Chicago.—p. 415.
38 *Use of Gold Salts in Treatment of Experimental Tuberculosis in Guinea-Pigs. L. M. DeWitt, Chicago—p. 426.
39 Focal Degeneration of Lumbar Cord in Case of Infantile Scurvy, A. F. Hess, New York.—p. 438.
40 *Relationship of Leukocyte Count and Bone Marrow Changes in Acute Lobar Pneumonia. S. S. Samuels and R. A. Lambert, New York.—p. 443.
41 *Case of Spirillosis. C. C. Hartman and G. R. Lacy, Pittsburgh.—p. 449.
42 *Liberation of Antibodies on Injection of Foreign Proteins. S. F. Herrmann. Minneapolis.—p. 457.
43 *Presence of Meningococcus in Blood. K. F. Maxcy.—p. 470.
44 *Acute Respiratory Diseases Among Troops with Especial Reference to Empyema. L. S. Beals, B. F. Zimmerman and S. B. Marlow, Camp Custer, Mich.—p. 475.

38. **Gold Salts in Treatment of Experimental Tuberculosis.**—From DeWitt's experiments the conclusion is drawn that the treatment of experimental tuberculosis in guinea-pigs with gold salts is not efficacious. No attempt has been made to use these salts in human patients. The tendency to hemorrhage and hyperemia in the gold treated animals and the marked shortening of life on account of the treatment suggest that the treatment of human tuberculous patients with gold is not without danger. Furthermore, the chemical analyses of the organs demonstrate that there is no specific affinity of gold for tuberculous tissues and that the gold in the tissues is probably fixed in the tissue cells in such a form that it cannot inhibit the growth of the tubercle bacillus nor the development of the tubercle even when its concentration in the tissues is much more than sufficient to cause complete inhibition in the test tubes.

40. **Leukocytes and Marrow in Pneumonia.**—Samuels and Lambert made their observations on seventeen cases of acute lobar pneumonia which came to necropsy. Only adults were included in the series, since in the earlier periods of life the bone marrow in the long bones is normally so active that degrees of hyperplasia cannot be easily recognized. A close parallelism in the leukocyte count and the degree of hyperplasia of the marrow was found in less than half of these cases. A few showed relatively inactive or aplastic marrows, with a leukocyte count well above normal. On the other hand, in several cases leukocyte count was persistently low during life, but a markedly hyperplastic marrow was found at necropsy. To explain an aplastic femur marrow associated with a leukocytosis during life there may exist either a hyperplasia of the marrow of the flat bones only—a very improbable condition—or a formation of leukocytes outside the marrow, most probably in the spleen. The presence of large numbers of cells of the myeloid series in the splenic pulp would favor the latter explanation. The cases of marked hyperplasia of the marrow with low leukocyte count are not easily interpreted. The authors could not find evidence in these cases of such rapid spread of the lesion as would account for a low leukocyte count through the draining of these cells out of the circulation.

41. **Case of Spirillosis.**—The occurrence, in a young Italian, of a recurrent fever characterized by acute exacerbations, accompanied by severe secondary anemia, general lymph node involvement, splenomegaly and varying lung symptoms, and the isolation from the blood both during life and at necropsy of a motile curved organism are the salient features of the case cited by Hartman and Lacy. The resemblance to typhoid during the earlier course of the disease was striking save that all of the laboratory tests were consistenly negative. The diagnosis of a generalized tuberculosis was not corroborated. The most unusual feature was the sudden enlargement of the lymph nodes with subsidence within a few days to a more nearly normal size. A study of the sections suggests that enlargement was due to a severe inflammation of the intranodal sinuses which healed by granulomatous changes leading to extensive connective tissue development. The progressive secondary anemia was extreme, and there were no evidences of blood regeneration found either in the blood examinations or in the sections of the marrow. The marrow was red but the sections showed the color to be due to necrosis and hemorrhage and not to hyperplasia. The hemosiderin in the liver and spleen as well as

the extreme phagocytosis of red cells in the latter showed that the anemia was due not only to the failure in production of red cells, but also to actual blood destruction in the tissues. The splenomegaly was probably secondary to the anemia. A few small foci of nodular connective tissue, slight edema and the pleural hemorrhages were all that were present at necropsy to explain the lung symptoms. Anatomic changes associated with the diarrhea and general toxic condition were seen in the stomach ulcers, the membrane in the colon and in the necroses of the liver. The main point of interest is, of course, the isolation both before and after death of an actively motile, spirally curved organism from the blood. The spirillum grew equally well aerobically and anaerobically.

42. **Liberation of Antibodies by Foreign Protein.**—In rabbits sensitized with streptococci Herrman found that a definite liberation of specific opsonins and agglutinins follows the injection of foreign protein. A similar rise in specific opsonins also occurs in rabbits sensitized with meningococci. Foreign protein injections have no effect on antibodies in typhoid immune rabbits. In suitable rabbits, which do not readily produce lysins against sheep corpuscles, the injection of foreign protein within ten days after the injection of antigen is followed by a marked liberation of specific lysins. A variety of foreign proteins can be used. Human serum, typhoid vaccine, human ascitic fluid, and guinea-pig serum proved equally efficacious.

43. **Meningococcus in the Blood.**—During the epidemic at Camp Beauregard in February, 1918, twenty-seven blood cultures done by Maxcy on patients suspected of being cases of abortive meningococcus infection were negative. A case of meningococcus infection is reported in which the blood stream invasion was transient and the organism quickly localized in the meninges where it yielded to the intraspinal injection of serum. A case of meningococcus septicemia with transient meningeal involvement is reported with recovery only after the injection of large amounts of antimeningococcus serum intravenously.

44. **Acute Respiratory Diseases and Empyema.**—In a group of 115 consecutive cases of pneumonia and empyema occurring at Camp Custer a definite history of an acute antecedent bronchitis, pharyngitis or tonsillitis was obtained in over 80 per cent. of the cases. In the majority of cases of empyema, a hemolytic streptococcus was the causative organism. During the period of prevalence of emypema, streptococci were demonstrable in the majority of the throats of healthy soldiers (including fresh recruits) as well as of patients entering the hospital with respiratory infections. The mortality was highest (61.5 per cent.) in the cases of empyema following measles, and lowest (22.7 per cent.) in the cases in which empyema was the primary condition. In empyema complicating pneumonia, the mortality was 38.2 per cent.; the mortality of all cases of empyema was 40.5 per cent. At necropsy the outstanding features have been the finding of widespread lesions with a tendency to involve serous membranes, the occurrence of a severe bronchitis in the majority of cases, and a type of bronchopneumonia so distributed as often to resemble closely a lobar process.

The relative incidence of empyema complicating pneumonia was high, one month 50 per cent. of pneumonia cases developing empyema. Of 830 cases of measles (including rubella), 4.4 per cent. developed pneumonia or empyema; of this group, empyema was the primary condition clinically in 70 per cent. of the cases.

Laryngoscope, St. Louis

October, 1918, **28**, No. 10

45 *Conditions Developing* in Chronic Suppurative Otitis Media which Should Constitute Basis for Exemption from Military Service. E. B. Dench, New York.—p. 717.
46 Method of Analysis of Bárány Tests in *Pathologic* Cases. L. Fisher, *Philadelphia.—p. 724.*
47 Phonetics in *Relation to* Speech Defects. M. K. Scripture, New York.—p. 735.
48 Suspension Laryngoscopy—An Aid in Removing Foreign Bodies from the Larynx and Esophagus; Report of Cases. W. B. Chamberlin, Cleveland.—p. 744.
49 Submucous Resection of Nasal Septum. F. M. Shook, Oakland, Calif.—p. 750.
50 Adenocarcinoma of Nose; Four Cases. L. M. Hurd, New York. —p. 757.
51 *Simplification of* Surgical Treatment of Peritonsillar Abscess. T. H. Cates, Little Rock, *Ark.—p. 764.*

Medical Record, New York

Oct. 26, 1918, **94**, No. 17

52 Social Responsibilities in Rehabilitation of Disabled Soldiers and *Sailors.* D. C. McMurtrie, New York.—p. 705.
53 *Blinded* Soldiers as Masseurs in Hospitals and Sanatoria for Reconstruction and Rehabilitation of *Disabled* Soldiers. S. A. Knopf, New York.—p. 709.
54 Medical Explorers *and Adventurers.* W. *Browning,* Brooklyn. —p. 712.
55 Ipecacuanha and Emetin in Therapeutics. E. W. Koch, Buffalo. —p. 718.
56 Colloidal Silver and Gold *Treatment* of *Lobar and* Bronchial Pneumonia, Also of Influenza and Its Complicating Pneumonias. W. B. *Holden,* New *York.*—p. 720.
57 Method of Health Conservation. G. F. Boehme, Jr., New York. —p. 722.

Nov. 2, 1918, **94**, No. 18

58 Surgical Treatment of Empyema. W. W. Babcock.—p. 751.
59 *Prevention,* Diagnosis, Treatment, Immunity *and* Cure *of* Tuberculosis. O. *Paget,* Fremantle, W. Australia.—p. 754.
60 *Types of Influenza in Infants and Children* Seen in Current Epidemic. L. Fischer, *New York.*—p. 763.
61 Radium Treatment of Psoriasis. D. W. Montgomery, San Francisco.—p. 765.
62 Intramuscular Injections of Colloidal Sulphur in Treatment of Rheumatic Conditions. W. L. *Secor,* Kerrville-on-the-Guadalupe, Texas.—p. 765.
63 *Case of Aspirin Habit. D. I. Macht, Baltimore.—p. 767.

63. **Case of Aspirin Habit.**—Macht cites the case of a man who had a chronic periostitis and osteitis of one tibia, who about two and a half years previously found that a tablet of acetylsalicylic acid (aspirin), 5 grains, gave him distinct relief, and therefore he continued to take the drug for the relief of his symptoms. At the beginning one or two 5-grain tablets were sufficient to keep him comfortable the whole day, but very soon habituation was noted and the patient had to increase the dose. For the past two years he has been taking from five to twelve tablets of the drug daily; in other words, from 25 to 60 grains of the drug have been consumed by the patient every day for nearly two years. In spite of the enormous quantity of the drug consumed, very few toxic symptoms have been noted by the patient himself or found on physical examination. The only features of a slightly abnormal character found were obstinate constipation, slight digestive disturbances, and a rather low blood pressure.

Michigan State Medical Journal, Grand Rapids

October, 1918, **27**, No. 10

64 Two Cases of Kidney Calculi. *J.* E. Davis, Detroit.—p. 387.
65 Early Diagnosis of Phthisis Pulmonum. J. L. Chester, Detroit. —p. 389.
66 Surgical Treatment of Procidentia Uteri. H. Hagerty, Detroit. —p. 391.
67 Hemangioma of the Tonsil. C. A. Campbell, Cleveland.—p. 392.
68 Outline of the Present Scope of the Public Health Administration *in Cities.* C. *G. Parnall, Ann Arbor.—p.* 393.
69 Diagnosis and Early Recognition *of* Typhoid. E. W. Haass, Detroit.—p. 397.
70 Aqueous Solution of Liquor Formaldehyd and 2 per cent. Glycerin in the Treatment of Wounds. A. S. Kitchen, Escanaba.—p. 404.

November, 1918, **17**, No. 11

71 *Blood Transfusion in Small Town Hospital—Plea for Its More Frequent Use. W. L. Finton, Jackson.*—p. 433.
72 Treatment of Bright's Disease. J. H. Dempster, Detroit.—p. 425.
73 Extravasation of Urine. W. E. Keane, Detroit.—p. 429.
74 Test of Labor. G. Kamperman, Detroit.—p. 434.
75 Country Surgery in Country Hospital. W. J. Herrington, Bad Axe.—p. 438.
76 *Simplified Method *of Aspirating Gastric* Contents in *Hypersensitive* Patients. C. D. Aaron, Detroit.—p. 440.

76. **Simplified Method of Aspirating Gastric Contents in Hypersensitive Patients.**—Aaron believes that it is possible to strip this procedure of its terrors and inconveniences by not allowing the tube to enter the stomach at all, and yet obtaining a quantity of gastric contents sufficient for chemical and microscopic analysis. In devising this process, he has been guided by a consideration of the anatomic fact that the lower third of the esophagus is normally distended, forming a continuous open lumen. As soon as the stomach tube reaches that part, the cardia, following the law of contrary innervation, becames relaxed, and as a result the gagging and retching of the patient induces a regurgitation of some of the gastric contents into the esophagus, where

the fenestrated end of the stomach tube is ready to receive it, and whence it is promptly aspirated by the atmospheric vacuum action of the terminal rubber bulb. Thus it is quite unnecessary for the tube to enter the stomach, and the greater the gagging and retching of the patient the easier it is to obtain a sample of the gastric contents. This arrangement also overcomes what has long been considered another difficulty, namely, an abnormally low position of the stomach, where the tube cannot reach the surface of the gastric contents. The reflex effect of the irritation of introducing the tube beyond the tracheal bifurcation causes the contents of the stomach, however low, to regurgitate into the esophagus through the relaxed cardia and thus obligingly meet the receptive stomach tube half way.

Neurological Bulletin

August, 1918, **1**, No. 8

77 *Cerebral Gliomata, Two Cases. I. J. Sands, New York City.—p. 307.
78 Metastatic Carcinoma of the Skull. Its Roentgenological Diagnosis and Its Frequency. T. Scholz, New York City.—p. 319.
79 Aneurysm of the Internal Carotid Involving the Abducens Nerve. C. A. McKendree, New York City.—p. 322.
80 Osteitis Deformans: Report of Two Cases. S. R. Leahy, New York City.—p. 325.
81 Case of Tumor of the Hypophysis. I. S. Wechsler, New York City.—p. 331.

77. **Cerebral Glioma.**—Sands cites the case of a man suffering from hemiplegia with loss of sphincteric control for about one year prior to his death. He showed general arteriosclerosis, blood pressure, 170 systolic, sluggishly reacting pupils; positive globulin and twelve cells, but negative Wassermann, in the spinal fluid. Mentally, he was somewhat incoherent and rambling; he exhibited patchy amnesia with preservation of personality. Postmortem examination showed a glioma in the right parietal region, cerebral and visceral arteriosclerosis, and bronchopneumonia.

New York Medical Journal

Oct. 26, 1918, **108**, No. 17

82 Spanish Influenza in Army. C. L. Mix, Camp Mills.—p. 709.
83 General Survey of Influenza Epidemic. R. S. Copeland, New York.—p. 715.
84 Epidemiology and Administrative Control of Influenza. L. I. Harris, New York.—p. 718.
85 Symptomatology of Prevailing Epidemic Influenza. M. Manges, New York.—p. 722.
86 Nervous and Mental Disturbances of Influenza. S. E. Jelliffe, New York.—p. 725. To be continued.
87 Treatment of Influenza. I. W. Voorhees, New York.—p. 728.
88 Complications of Influenza. A. Kahn, New York.—p. 729.
89 Prophylactic Treatment of Influenza for Prevention of Pneumonia. C. M. Bellows, Brooklyn,—p. 730.

Nov. 2, 1918, **108**, No. 18

90 New York State's Problem of Care of Feebleminded. W. B. James, New York.—p. 753.
91 Nervous and Mental Disturbances of Influenza. S. E. Jelliffe, New York.—p. 755. To be concluded.
92 *Psychopathic Control of Prostitution. J. O. Cobb, Chicago.—p. 758.
93 Diseased Tonsils and Focal Infection; Report of Cases. H. Rodman, New York.—p. 761.
94 Allen-Joslin Treatment of Diabetes Mellitus. A. Woldert, Tyler, Texas.—p. 764.
95 Few Avoidable Errors. R. H. MacNair, Springfield, Mass.—p. 767.
96 Reflex Convulsions During Dentition. C. Rosenheck, New York.—p. 769.

92. **Psychopathic Control of Prostitution.**—Cobb recommends: 1. The employment of psychopathic investigators for all venereal clinics for the purpose of carefully surveying the mental capacity of all arrested prostitutes, with the end in view of securing legislation in all the states for the custodial care of all chronic prostitutes that can be convicted of any of the mental defects under present statutes. 2. A state wide movement for custodial and probationary control of all convicted prostitutes. 3. A state wide movement to buy farms, and to build reformatories, for custodial and probationary control of all feebleminded and certain other types of psychic inferiority.

New York State Journal of Medicine

October, 1918, **18**, No. 10

97 Is Cesarean Section Justifiable in Eclampsia and Placenta Praevia? G. L. Brodhead, New York.—p. 389.
98 Two and One-Half Years' Experience with Conservative Treatment of Eclampsia. R. McPherson, New York.—p. 395.
99 Fibroid Tumors of Uterus. E. J. Ill, Newark, N. J.—p. 399.
100 Some Causes of Stillbirth. J. C. Edgar, New York.—p. 406.
101 Establishment and Maintenance of Breast Feeding. J. P. C. Griffith, Philadelphia.—p. 411.
102 Classification and Serum Treatment of Pneumonia at Camp Upton. R. L. Cecil.—p. 414.
103 Physician and Public. H. L. Winter, Cornwall.—p. 418.

Philippine Journal of Science, Manila

September, 1918, **13**, Sec. B, No. 5

104 *Tissue Invasive Powers of Flagellated and Ciliated Protozoa with Especial Reference to Trichomonas Intestinalis. F. G. Haughwout, Manila.—p. 217.
105 *Various Methods of Serum Application in Bacillary Dysentery. P. T. Lantin, Manila.—p. 261.
106 Portal of Entry in Experimental Chronic Pulmonary (Systemic) Blastomycosis. H. W. Wade.—p. 271.
107 Preservation of Cholera Stool Specimens for Delayed Bacteriologic Examination. C. S. Panganiban and O. Schöbl.—p. 275.

104. **Flagellated and Ciliated Protozoa.**—In the past the attention of parasitologists and physicians has been focused largely on the effects of the parasite on its host—a most natural point of view. But in reviewing the subject, especially in the light of recent evidence, Haughwout says, it is hard to escape the impression that the host, on occasion, may transform an apparently harmless parasite into one that is pathogenic or even lethal to its host. This is entirely apart from conditions of lowered vitality and resistance, which proverbially favor the development of infections of all kinds. He suggests that the term "harmless commensal" has been very much overworked. The case of the intestinal nematode *Ascaris lumbricoides* is in point, and apparently the day is not far distant when the terms "harmless commensal" and "symbiont" will be used in the literature with much greater caution than has been shown in the past. It has long been Haughwout's belief that time would show that all animal parasites that have been regarded as commensals and symbionts in the alimentary tract, if not actully giving rise to lesions, would yet be shown to affect unfavorably the physiologic balance of the host in some way. This paper deals with that thought.

105. **Serum Treatment of Bacillary Dysentery.**—According to Lantin the use of specific treatment seems to be an effective means of checking the progress of the disease in cases of true bacillary dysentery. Of twenty patients whom he has so treated only one patient died. Different methods of administering the serum, namely, intramuscularly, intravenously and by rectum (serum enema), have been employed. Out of seventeen cases in which cultures were made from the feces, six were negative. Of the eleven cases that were found to be positive, two were of the Shiga and one of the Flexner type. Of these twenty cases, five patients were treated medicinally, combined with intramuscular injection of serum, with one death; six patients intramuscularly with no deaths; three patients treated both with intramuscular injections and antidysenteric serum by rectum with no mortality; three patients treated solely with serum by rectum with no deaths; and finally, three patients treated intravenously, with no deaths.

The serum by rectum was given in the following way: The patient was put in the knee chest position. The injection of the serum was preceded by a cleansing enema of 1.5 per cent. solution of sodium bicarbonate; this was followed by another enema of starch solution with a few drops of tincture of opium (60 c.c. with 10 drops of tincture of opium) to diminish the irritability of the intestine; a half hour later the serum was given by rectum. The amount of serum used was from 30 to 50 c.c. daily, depending on the severity of the case, although the serum can frequently be given without any danger and in larger doses. The intramuscular administration of serum was done with the usual aseptic precautions. Twenty c.c. of the serum were given twice a day, usually injected into the buttock. Larger doses may be given, depending, of course, on the severity of the case. Intravenous injection was done by the closed method, and under rigid asepsis into the median basilic vein. To avoid anaphylactic symptoms, 1 c.c. of the serum may be injected intravenously about six hours before the full dose is given. Lantin's dosage was 10 c.c. every other day.

Public Health Journal, Toronto

October, 1918, **9**, No. 10

108 Child Welfare in Democracy. J. H. Mullin, Hamilton.—p. 445.
109 Tuberculosis; A Public Health Problem. H. W. Hill, London, Ont. —p. 457.
110 Public Health Act—Its Scope and Application. F. G. Forbes, Liverpool, N. S.—p. 461.
111 Eighteenth Annual Report of Executive Council of Canadian Association for Prevention of Tuberculosis. G. D. Porter.—p. 466.
112 Canadian War Experience. P. J. Bench, Toronto.—p. 473.

South Carolina Medical Association Journal, Greenville

October, 1918, **14**, No. 10

113 Diagnosis of Appendicitis Complicating Pregnancy. G. H. Bunch, Columbia.—p. 250.
114 Urinary Calculi; Diagnosis and Treatment. E. C. Baynard, Charleston.—p. 253.

Texas State Journal of Medicine, Fort Worth

October, 1918, **14**, No. 6

115 Congenital Malformations of Rectum and Anus. F. Paschal, San Antonio.—p. 220.
116 Constipation. E. V. Depew, San Antonio.—p. 222.
117 Pelvic Infection and Application of Drainage. S. P. Cunningham, San Antonio.—p. 224.
118 Indications for Surgical Interference in Cases aof Acute Suppurative Conditions of Midle Ear and Mastoid Cells. E. M. Sykes, San Antonio.—p. 226.
119 Trachoma; Its Importance as Public Health Problem. A. B. Crain, Belton.—p. 229.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

July-September, 1918, **15**, No. 175-177

1 *Paratyphoid in Children. E. Stolkind and A. Lorey.—p. 161.
2 Tuberculosis as Seen in Public Elementary Schools. J. Priestley and B. Richardson.—p. 183.
3 External Eye Diseases of Elementary Schoolchildren. B. Richardson.—p. 201.
4 Laceration and Infection of Joints in Children. A. Mitchell.—p. 214.
5 Partial Sclerema Neonatorum. G. Pernet.—p. 218.
6 Multiple Papillomata of Larynx Removed by Operation (Suspension Method) After Tracheotomy; Death Five Weeks Later from Acute Membranous Tracheitis and Bronchitis. H. Tod. —p. 220.

1. **Paratyphoid in Children.**—Stolkind and Lorey state that a study of the results of postmortem examinations of paratyphoid cases in children and adults, including those reported in the literature and their own cases, shows that the morbid changes have been observed resembling (1) typhoid; (2) acute enteritis, acute gastro-intestinal catarrh, or acute gastritis, etc.; (3) dysentery; (4) those of a transitional form, that is, inflammation of the intestinal lymphatic apparatus (swollen follicles and Peyer's patches, etc.); (5) septicemia. In some cases no changes in the gastro-intestinal canal were found. Stolkind and Lorey have not been able to find a single recorded case of proved paratyphoid in a child in which the lesions, at the necropsy, resembled those typical of typhoid. They also record a case of intra-uterine infection with *B. paratyphosus* B in the blood of a newborn child. The blood culture and positive agglutination showed *B. paratyphosus* B. The mother had had acute gastro-enteritis with fever some time before. Cases are also recorded of the I. typhoid form of paratyphoid; II. gastro-intestinal form of paratyphoid; III. the choleraic form, and IV. influenzal or respiratory form. The clinical history of the disease is described in detail.

In the treatment of a case of paratyphoid the authors point out that the nursing, general hygiene, diet, and in severe cases drugs are of great importance. Generally the authors give liquid food. In mild cases of the typhoid and respiratory forms they allow the older children biscuits, cooked minced meat, etc.. Alcohol should not be given in any case. If stimulants are needed, use tea, coffee, caffein, digitalis, camphorated oil, etc. In many cases of profuse diarrhea, collapse, etc., repeated subcutaneous injections of normal salt solution (one-half to 1½ liters) were of value. For abdominal distension proper diet is required. Turpentine proved absolutely useless in all cases. For toxic meteorism as well as for bacteriotoxic paralysis of the vessels (with frequent filiform and irregular pulse, dyspnea, general weakness, perspiration, pale or cyanotic skin, and sometimes collapse with fall of the temperature), subcutaneous injections of epinephrin with normal salt solution (six to ten times in twenty-four hours), caffein and camphorated oil were sometimes of use. Fever should be treated by hydrotherapy (baths not below 85). Intestinal antiseptics have no value. Vaccines may be employed in severe cases.

British Journal of Tuberculosis, London

Octobr, 1918, **12**, No. 4

7 Early Diagnosis of Tuberculosis in Children. J. C. Macgown. —p. 145.
8 *Comparison of Physical Signs in Early or Suspected Pulmonary Tuberculosis in Children, with Results Found on Examination by Fluorescent Screen. A. A. R. Green.—p. 153.
9 Misconceptions as to Methods Used in Combating Tuberculosis. E. E. Prest.—p. 157.
10 Continuous Inhalation in Treatment of Pulmonary Tuberculosis. C. Muthu.—p. 160.
11 Invisible Wound: Plea for Tuberculous Pensioners. H. B. Collins. —p. 162.

8. **Diagnosis of Tuberculosis in Children.**—In twenty-eight of forty cases examined the physical signs and fluoroscopic findings were in accordance; in twelve cases they were at variance.

Edinburgh Medical Journal

October, 1918, **21**, No. 4

12 Province of Medical Ethics. G. Parker.—p. 191.
13 Training of Student of Medicine. Teaching of Neurology. J. J. G. Brown.—p. 207.
14 Neurology and Medical Curriculum. E. Bramwell.—p. 209.
15 Psychology and Medical Curriculum. B. Hart.—p. 213.
16 Teaching of Mental Diseases in Edinburgh. G. M. Robertson. —p. 225.
17 Teaching of Psychology to Medical Students. T. A. Ross.—p. 231.
18 Teaching of Psychology to Medical Undergraduates. R. D. Clarkson.—p. 240.

Journal of Laryngology, Rhinology and Otology, London

October, 1918, **33**, No. 10

19 *Serologic Investigation of Vincent's Angina. F. E. Taylor and W. H. McKinstry.—p. 289.
20 Intrinsic Cancer of Larynx and Operation of Laryngofissure. I. Moore.—p. 294.
21 Rapid Lateral Version of Patient in Tonsil and Adenoid Operations. B. S. Jones.—p. 308.
22 Sarcoma of Tonsil. D. Guthrie.—p. 310.

19. **Serologic Investigation of Vincent's Angina.**—In only two cases out of a total of fifty-five cases of Vincent's angina which were examined by the Wassermann test was the reaction positive, the remaining fifty-three cases being negative. The positive character of the reaction in these two cases was not due to the fusospirillary infection of Vincent. In both cases the condition was one of Vincent's angina in a subject of latent syphilis. As a result of this investigation and of a careful and critical consideration of cases recorded in the literature, Taylor and McKinstry have come to the conclusion that the prevailing belief in the occurrence of a positive Wassermann reaction in Vincent's angina has no foundation in fact, and that the two conditions can be differentiated with absolute certainty by the application of bacteriologic and serologic methods; and that when the complement fixation test of Wassermann is positive in cases of Vincent's angina, then a double infection exists, either as a coincident syphilitic and Vincent's infection, or as the occurrence of Vincent's angina in the subject of latent syphilis.

Lancet, London

Oct. 12, 1918, **2**, No. 4963

23 *Gunshot Wounds of Joints. J. Campbell.—p. 477. To be continued.
24 Some Aspects of Infant Feeding. J. C. Drummond.—p. 482.
25 *Prophylactic Vaccinations against Catarrhal Affections of Respiratory Tract. J. W. H. Eyre and C. E. Lowe.—p. 484.
26 Diagnosis of Early Phthisis. A. Foster.—p. 487.
27 Trench Fever: Critical Analysis of Report of American Commission. W. Osler.—p. 496.
28 Some Considerations of Tuberculosis Problem. R. C. Wingfield. —p. 500.

23. **Gunshot Wounds of Joints.**—Gunshot wounds involving joints form something like 4 per cent. of the total number of wounds met with in the present war. Campbell's paper is founded on an experience of over 800 cases and on operative and postoperative treatment carried out in casualty clearing stations and general hospitals. Campbell says that absolute rest and fixation are the essential principles underlying the successful treatment of all joint wounds in their early stages, and their value cannot be overestimated. The best method for securing them, whether for transport or treatment, is by fixed axial extension of the limb in one of Thomas' or Jones' splints, the limbs being supported in it by bands of perforated zinc, the ends of which are turned round the lateral bars; finally, the limb is well padded, covered with Gooch's splinting, and secured in the splint by a firm bandage. To insure an absence of movement during dressings it is essential for as few as possible of the metal supports to be removed, and then only with the greatest care. No movement, however slight, should be permitted. The use of strips of flannel or cotton bandage to support the limb is strongly condemned by Campbell. They are not rigid, and so permit of an appreciable amount of movement in bed and during transport—sufficient to vitiate the result in many of the more serious cases.

The need for rest and fixation by no means begins in the casualty clearing stations; it is essential for them to be secured at the time the patient is wounded or at the next earliest moment possible. Plaster of Paris is sometimes used instead of splints to secure fixation—in late stages of convalescence it is useful to allow of the patient's getting about. But in early septic cases its use is attended with many disadvantages. Chief of all is the impossibility of preventing the plaster from becoming soiled with the septic discharge from the wound; this then forms a center from which the wound is constantly reinfected. Another important disadvantage is that it does not allow of access to the adjacent parts of the limb, thereby preventing all possibility of massage and obscuring any changes in the neighborhood of the joint.

Asepsis should be secured at the time of operation. Dressings should be changed as infrequently as possible for two reasons, (1) the risk of movement, and (2) the risk of fresh infection from without. To insure a good range of movement it is advisable for massage and movement to be begun as early as possible in cases that have run an aseptic course, that is, about the tenth lesion. Cases that have been septic even to only a moderate degree should have been free from all clinical signs of infection for at least three weeks or even longer, according to the degree of sepsis, before movement is resorted to. The appearance of effusion in the joint or of general or local reaction after movement is an indication for a pause in its application.

The resumption of movement in joints where foreign bodies are retained is liable to be attended by trouble that may quite easily cost the patient his limb. Unless the foreign body is removed by operation, movement is best postponed for at least several months. The application of a tourniquet to the limb prior to operation is essential if a uniformly high standard of results is to be obtained. Washing out of the joint cavity, as a routine measure at a primary operation where the joint is laid open, appears useful.

Every attempt should be made when dealing with early wounds to prevent blood accumulations by obliterating all "dead space" and yet allow of drainage of any exudate that may take place. If primary suture is performed, this may be accomplished by careful hemostasis, followed by the application of a very firm bandage. Should, however, the wound be unsuitable for primary suture or, with suture, still show a dead space, these objects can be gained by using as a pack gauze soaked in sterilized liquid paraffin; this is carefully and firmly pushed into every recess and the limb firmly bandaged. The pack exerts pressure, and so helps in hemostasis, and the paraffin hinders coagulation of blood and serum, and so allows of their drainage along the gauze into the more superficial parts of the dressing. Such a pack may be left in situ for two to four days or longer, the superficial parts of the dressing being changed on the first or second day only if the "dressing has come through." When the pack is removed it may be replaced by paraffinized or dry gauze as required, unless the wound can be entirely closed. The cases in which this treatment yields excellent results are those showing large loss of bone substance involving articular cartilage, and in which the synovial cavity cannot be closed for anatomic reasons.

Unless the wound has been excised en masse, Campbell says, the use of fat grafts to obliterate dead space would seem to be not unattended by risk. Where, however, asepsis can be reasonably guaranteed they yield excellent results. Should any gap be left in an articular surface, one way of obliterating it that yields useful results is to fill it up with a 2 per cent. paste of dichloramin-T in neutral sodium oleate or neutral sodium stearate before closing the joint. A mass of bismuth iodoform petrolatum paste should not be used owing to the risk of bismuth poisoning arising shortly afterward or from the danger of its acting as a foreign body and being extruded later on. Secondary operations in a base hospital are not infrequently required. It is essential to carry them out without removing the splint. To attempt otherwise courts disaster from a recrudescence of septic arthritis with its attendant consequences.

Aspiration is useful in doubtfully infected cases for the purpose of making bacteriologic and cytologic examinations of the joint fluid, but if carelessly performed the damage done to the articular cartilage and synovial lining may immeasurably outweigh the advantages gained. It is advisable to use it as rarely as possible in those cases that are but mildly septic; indeed, here it is scarcely necessary, since the ordinary clinical signs yield information of more practical value for treatment. It is necessary, however, when the intra-articular tension becomes high, otherwise the infection may burst outside the synovial cavity and perhaps track widely along the fascial planes. Exploration and washing out of the joint cavity followed by suture appears to have but a limited application. Such cases as seem suitable for the treatment almost invariably settle down if carefully immobilized in the extended position and left severely alone, aided, perhaps, by aspiration; in those cases in which it is used further operative procedures have nearly always to be resorted to. Should this procedure be adopted, free exit for the fluid should be permitted for fear lest any recesses in the joint cavity that are already locked off by adhesions should be opened up and have sepsis driven into them. All flakes of blood clot, fibrin, and pus should be sought out and removed; finally, the limb is bandaged tightly to prevent exudation and allow of the rapid formation of adhesions.

Morisons' bismuth iodoform petrolatum paste seems to have two valuable fields of use: (*a*) In cases in which a portion of the bone inside the joint has been chiseled away it is advisable to smear a small quantity over the freshly cut surface prior to closing the joint. (*b*) In cases, for instance, the knee, where, after operation, a large gap that cannot be repaired is left in the joint coverings, accompanied by a more or less extensive loss of subjacent bone involving the articular surface, bismuth iodoform petrolatum paste may be smeared over the entire wound surface after excision and the wound closed so far as possible in layers either at once or by delayed suture, after having carefully obliterated dead space with a paraffinized gauze pack. In the treatment of septic arthritis bismuth iodoform petrolatum paste has been largely advocated and not infrequently adopted. Bismuth iodoform petrolatum paste used in this way inside a joint has a serious drawback; it may be ejected later on as a foreign body and so cause considerable trouble on resumption of movement.

In early cases, after efficient excision of the wound, the Carrel-Dakin method need be adopted only. There is no doubt that simple primary suture or delayed primary suture after using bismuth iodoform petrolatum paste yields the better results. On the other hand, when sepsis develops, in the large majority of cases the Carrel-Dakin method yields the better results. Excision of the joint can be used for either early or late cases, and may be either partial or complete.

Amputation is reserved for: (*a*) Patients who are too ill to allow of conservative measures being adopted. (*b*) Cases in which the comminution of bone is so extensive as to preclude the possibility of successful end-result. (*c*) Wounds accompanied by severe lesions of the main nerves and muscles. (*d*) Wounds in the lower limb accompanied by serious damage to the main vessel and in which there is considerable risk of gangrene. (*e*) Septic cases, in which an extensive osteomyelitis of a large bone, for instance, femur or tibia, is also present.

25. **Prophylactic Vaccinations Against Catarrhal Affections of Respiratory Tract.**—The vaccine used in this work was prepared in two different strengths, the weaker initial dose being followed ten days later by the second stronger dose; in each instance the volume of vaccine administered amounted to 0.5 c.c. This vaccine was prepared from organisms contained in the secretions of purulent bronchitis and in the sputums of other catarrhal cases among the troops in England. It contained:

Organism	Organisms per 0.5 c.c. First Dose	Second Dose
Pneumococcus	50	100 million
Streptococcus	10	50 million
B. influenzae	10	30 million
Staphylococcus aureus	200	500 million
M. catarrhalis	25	75 million
B. pneumoniae	50	100 million
B. septus	50	100 million

This vaccine was designed to produce an artificial immunity, not only against the first three virulent organisms, which are frequently found present in fatal purulent bronchitis, but also to immunize against the other organisms most frequently found in catarrhal sputums and nasal discharges. There may be no reaction, but in such cases the immunity conferred may be as efficient as in those who react. There may be slight reaction. This is the most likely sequela, and will probably occur during the twenty-four hours following inoculation and, apart from a possible tenderness at site of injection, may produce a mild general malaise, tiredness, stiffness, and slight headache. In cases with existing catarrhal discharges these may be temporarily aggravated. There may be severe reaction. This is not expected except in a small percentage of cases. There will develop during the following twenty-four hours an aggravated condition of the above symptoms, and also probably a rise of temperature and pulse rate. In these cases at least fourteen days should be allowed to elapse before the second dose is given. Severe reactions may possibly occur if the occasion of inoculation happens to coincide with the onset of measles, etc. The immunity conferred will probably not last longer than twelve months, and it should not be forgotten that there is always a certain percentage of persons in whom it appears impossible to produce any immunity.

Results: (*a*) 2,081 men inoculated with the initial dose. No reaction, 2,033, 97.7 per cent.; slight reaction, 42, 2.0 per cent.; severe reaction, 6, 0.3 per cent.; (*b*) 1,627 men inoculated ten days later with the second dose. No reaction, 1,607, 98.8 per cent.; slight reaction, 3, 0.7 per cent.; severe reaction, 7, 0.4 per cent. Slight reaction: headache in twenty-four cases; temperature from 99 to 101 in fourteen; sore throat in five; neck stiffness, nausea and fainting in five. Severe reaction: above symptoms more marked and accompanied by temperatures between 101 and 104. In spite of their being so small evidence of immediate reactions there was an increased susceptibility to the prevalent catarrhs of the area. These data show that the extensive use of catarrhal vaccine will not incapacitate troops in training to any appreciable extent. In order to determine whether these inoculated men had gained any appreciable immunity to respiratory catarrhal complaints, the first 1,000 men inoculated, and another selected 1,000 men none of whom had been inoculated with this or any other catarrhal vaccine were watched. It was found that the incidence of the influenza epidemic was appreciably less among the inoculated men than that affecting the average 1,000 of the uninoculated (2 per 1,000, as against 28.4 per average 1,000), a result which amply justifies the prophylactic use of M. C. V. The experimental work on which prophylactic, and still more therapeutic, vaccination was originally based showed clearly that, quite apart from the immediate local and general reactions, there supervened a period of lowered resistance or increased susceptibility toward infection by micro-organisms of the same species as those constituting the antigen, and that this so-called "negative phase" varied in extent from a few hours to two or three weeks, in accordance with the size of the dose of antigen, the general physical condition of the inoculated subject, and other factors. Fifteen admissions were reported between the administration of the first and second doses of M. C. V., and during the ten days following the injection of the second—much larger—dose of vaccine no less than eighty-two patients were admitted. Of course, most of these were quite trivial, and in the ordinary course of events, and among uninoculated men, would never have been admitted, but, nevertheless, even when heavily discounted, these figures emphasize the reality of the "negative phase," and prompt the suggestion that the initial dose might, with advantage, have been somewhat larger, or preferably that the interval between the two inoculations should have been a few days longer.

Sei-I-Kwai Medical Journal, Tokyo

August, 1918, **37**, No. 8

29 Granulitis Mycotica. K. Moteki.—p. 29.

30 Bacteriologic Examination of Secretion and Foreign Bodies of Wounds Caused in War. K. Moteki.—p. 31.

Archives Mensuelles d'Obstétrique et de Gynécologie, Paris

April-June, 1918, **7**, No. 4-6

31 *Possible Mishaps with Radiotherapy. S. Recasens (Madrid) and V. Conill (Barcelona).—p. 81.

32 *Trephining the Newly Born. A. Brindeau.—p. 103.

33 *Puerperal Infection with Diphtheria Bacilli. P. Balard.—p. 135.

31. **Mishaps from Radiotherapy.**—Recasens and Conill discuss the action of the roentgen and radium rays on the blood, the blood-producing organs, digestive, urinary and nervous systems, the sensory and the endocrine apparatus, on the pregnant, and on toxemia, metastases and dermatitis. They warn of the danger of gangrene when the skin is incised in a region that has been exposed to the roentgen ray. In one of their cases the apparently completely healed laparotomy wound sloughed open three weeks later and it did not heal again for five months. Since then they refrain on principle from roentgen exposure of the exact median zone of the abdomen for fear that a laparotomy might be necessary at some time. The vagina seems to be less susceptible than the skin. There is always a drop in the numbers of leukocytes after roentgen exposures, and they do not return to and somewhat surpass their former figure until after about two weeks. This leukopeny implies lessened powers of resistance, while the leukocytes that have been destroyed release leukotoxins into the blood stream. Toxins are also poured into the circulation when degenerated myomas and cancers are exposed to the rays unless they are well opened and drained. In much debilitated patients this toxemia may prove disastrous.

They warn further that as the primal effect of small doses of the roentgen and radium rays is stimulating, it is important to beware of beginning with small doses which might whip up the malignant disease. They are inclined to accept as an important factor in malignant disease a reduction in the numbers of leukocytes and of connective tissue cells; this suggested the advantage of combining local action of radium with means to stimulate leukocyte action. This they accomplished with diathermy applied to the spleen, and have had surprisingly favorable results with this in cases with such debility that a cure seemed hopeless. The removal of a cancer does not signify a cure so long as the numbers of leukocytes and of connective tissue cells keep low. Sometimes moderate radiotherapy may do great good by increasing these figures although, directly, little influence on the cancer itself is apparent. On the other hand, extremely high doses injure the leukocytes and the connective tissue cells, so that after a phase of transient benefit the cancer progresses more than if nothing had been done.

Rectovaginal fistulas originating from a cancer are permanent, but a fistula of the kind developing from dystrophy under radium treatment of a cancer may heal spontaneously.

They have had this occur in two cases. The bladder tolerates better than the rectum the action of the radium. Good filtering and prudent doses ward off fistulas; they use a brass filter, 1.5 mm. thick, covered with a rubber cot to absorb the secondary rays when the radium is to be used in contact with the sound wall of the vagina. They begin with 70 mg. for twenty-four hours, repeated with 40 mg. with intervals of eight or ten days, up to six or seven applications. Then after a two months' rest the initial dose is repeated. Four months later, if there is still any hard lump, one more application of 60 mg. is made for twenty-four hours. This dosage does not have the inconveniences of strong doses. Too big doses, besides fistulas into the rectum or bladder, are liable to induce necrotic processes, and fuse together the uterus, ovaries, tubes and bladder by an aseptic suppuration with multiple adhesions. Rapid metastasis, occurring with proper dosage, must be regarded as a casual coincidence. They advocate removal of most of the vegetating masses preliminary to the radium exposures to keep down to the minimum the toxemia from absorption. This toxemic reaction grows much less with succeeding exposures.

32. **Trephining the Newly Born.**—Brindeau has done this in four cases; twice for fracture with removal of a sequester, and complete recovery. In the other cases with meningeal hemorrhage of several days' standing, the trephining came too late or necropsy showed already irreparable lesions. The procedure is not so serious as might be supposed; a very narrow opening is enough to correct a depression of the bone. For hemorrhage, he found the operation simple and the drainage perfect, cutting an inverted U shaped flap, the apex just below the parietal protuberance. The groove cut in the bone parallels the radii starting in the parietal protuberance. The dura is incised in this groove. In fifteen hemorrhage cases on record, four of the children were saved. The conditions were exceptionally grave in all. The literature on the subject is reviewed, and four diagrams show the course of the blood vessels to be avoided, especially the anterior region of the dura mater close to the frontoparietal suture. The middle meningeal artery in the newborn slants upward and forward, instead of backward as in adults. There can be no question as to the necessity for immediate correction of any depression in the skull. The depression may occur spontaneously, the contraction of the uterus forcing the head of the fetus against the promontory.

33. **Puerperal Infection Due to Diphtheria Bacilli.**—Balard reports a small epidemic of eight cases of diphtheritic inflammation and false membranes in the vulva in the Bordeaux maternity. The women's infants were given them only to nurse, and none contracted diphtheria, and no throat cases developed from them; and the infectious process was mild. The epidemic was traced to one parturient with a mild sore throat, the true nature of which was not suspected at the time. There was no fever in any case, and antitoxin was not injected. The false membranes did not yield to any of the usual local measures, but they yielded to one or two local applications of diphtheria antitoxin. In two other cases, at the same time, false membranes developed in the vulva thicker, more confluent and tenacious, and not affected by antitoxin. No diphtheria bacilli were found in them, and they subsided under repeated cauterization with tincture of iodin. The ten women were in the common ward, but were tended by a separate nurse. In the fifty-one cases of vulvovaginal diphtheria which he has found on record, only 6 per cent. of the infants contracted diphtheria, and none in the milder cases. By the time the diphtheria is recognized in the mother, the child must have been contaminated, but newborn infants are quite resistant to most infections. In the cases in which an injection of antitoxin was given the infant, its harmlessness was corroborated.

Bulletin de l'Académie de Médecine, Paris

Sept. 17, 1918, **80**, No. 37

34 *Pseudotuberculosis. F. Barbary.—p. 243.
35 *Popliteal Paralysis. Poujoula and Messropian.—p. 252.
36 *Evolution of Free Grafts. L. Imbert.—p. 257.
37 System for Detection and Care for Repatriated Tuberculous Civilians. L. Bernard and P. Armand-Delille.—p. 259.
38 *Epidemic of Jaundice in Roumania. J. Cantacuzène.—p. 261.

34. **Hemorrhagic Spirochete Bronchial and Pulmonary Infection.**—Barbary reports two cases which deceptively simulated pulmonary tuberculosis. The sputum was blood stained and extremely fetid, and the microscope revealed the presence of spirochetes. The acute form subsides in a few days and the chronic form does not affect the general health much, and usually yields to arsphenamin. The disease seems to have been brought to France by troops from Indo-China. It is contagious, and requires isolation of the patient and disinfection of the sputum. Differentiation by microscopic examination of the sputum is particularly important as otherwise the cases are labeled tuberculosis.

35. **Prosthesis for Popliteal Paralysis.**—The light but strong spring device illustrated holds the foot in the axis of the leg, and flexion and extension proceed normally on the contact of the heel with the ground. It is worn inside the ordinary shoe and trouser leg.

36. **Free Grafts.**—Imbert has never seen unpedunculated grafts of any tissue (except skin) grow in size, but they often become adherent, and newly formed vessels may grow into the interstices, but this does not indicate actual vitality. Only the microscopic determination of living cells, with stainable nuclei, testifies to the persisting vitality of the graft. Even at the best, this vitality is of a low degree, and bone grafts, in his experience, all tended to disintegrate and finally disappeared in the course of a few months.

38. **Epidemic Jaundice in Roumania.**—An extensive epidemic is described among troops and civilians which presented the characteristics of spirochete jaundice but no spirochetes were found at any time, and bacteria resembling the paratyphoid B bacilli seemed to be the causal agent. There were no deaths except that pregnant women invariably succumbed. Fatty degeneration of the liver and lesions in the suprarenals were the chief findings. Cantacuzène suggests that the paratyphoid B bacilli, in adapting themselves to the organism after antityphoid vaccination, may develop into an autonomous jaundice-inducing race which, in its turn, may generate an aberrant clinical type.

Bulletins de la Société Médicale des Hôpitaux, Paris

July 5, 1918, **42**, No. 24

39 *Elimination of Quinin. J. Baur, Réveillet, Bocca and Tulasne.—p. 706.
40 *Glycosuria after Gastro-Enterostomy. P. Le Noir.—p. 707.
41 *Duodenal Dyspepsia. R. Gaultier.—p. 709.
42 *Research in Duodenal Chemistry. R. Gaultier.—p. 712.
43 *Addison's Disease. Laignel-Lavastine and R. Porak.—p. 715.
44 *Bacteriotherapy of Meningitis. Florand and Fiessinger.—p. 724.
45 Two Cases of Typhus at Paris. Florand and Fiessinger.—p. 730.
46 Smallpox. A. Florand and N. Fiessinger.—p. 734.
47 Three Cases of Spirochete Jaundice at Paris. L. Martin and A. Pettit.—p. 736.
48 Nervous Influenza in Bretagne. P. Merklen.—p. 738.
49 Committee Report on Hospital Medical Courses for Foreign Students. P. Sainton.—p. 739.

39. **Elimination of Quinin.**—The research done on dogs showed that quinin injected subcutaneously or by the vein diffuses through the organism. The blood soon gets rid of it, and it is eliminated by the kidneys and digestive tract. Part is fastened temporarily by the brain, spleen and liver, but later this is taken up by the blood and eliminated with the rest.

40. **Glycosuria After Gastro-Enterostomy.**—Le Noir found alimentary glycosuria in a certain proportion of persons who had had gastro-enterostomy done for ulcer at the pylorus. It seems to testify to some insufficiency of the pancreas and duodenum.

41. **Duodenal Dyspepsia.**—Gaultier reports cases in which chemical tests of the duodenum functioning revealed marked reduction in the amylolytic, trypsic and steapsic power while the stools showed profuse steatorrhea and deficient bile production. A gastro-enterostomy for ulcer at the pylorus had been done not long before; and the laboratory findings confirmed the clinical impression of duodenal dyspepsia with involvement of the pancreas or of the biliary apparatus or both. The clinical picture included abnormally large or loss of appetite, pains around and above the umbilicus, some-

times most prominent in the liver region, sometimes over the pancreas. With the former they spread to the right shoulder, with the latter to the lumbar region. They came on two or three hours after eating, a sensation of oppression or violent colics with passage of large amounts of gases. Nausea was frequent but vomiting was rare; diarrhea may alternate with constipation. Tympanites two or three hours after eating is a prominent symptom, and deep palpation may reveal tenderness in the duodenal zone. There is a tendency to a muddy complexion, malaise, somnolence, muscular atrophy and weakness, possibly also alimentary glycosuria, and the urea content is reduced as also the proportions between the total sulphur and the incompletely oxidized sulphur. We thus have it in our power now to detect duodenal dyspepsia with a precision hitherto unknown, and thus apply suitable treatment.

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Paris Medical

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Revue Médicale de la Suisse Romande, Geneva

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54 *General Physiology of Sense of Gyration. L. Bard.—p. 293.
55 *Prophylaxis of Goiter. C. Roux.—p. 317.
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Sept. 14, 1918, 48, No. 37

58 The Declining Birth Rate. H. Guggisberg.—p. 1233.
59 *Mumps Pancreatitis. K. Zimmerli.—p. 1245.

Sept. 21, 1918, 48, No. 38

60 *Influenza; E. Lenz.—p. 1265; P. Demiéville.—p. 1270.
61 Sarcomatous Leiomyoma of Stomach. R. Fritzsche.—p. 1273.
62 *The Suprarenals in the Severely Burned. T. Nakata.—p. 1283.

59. **Mumps Pancreatitis.**—Zimmerli relates that about 25 per cent. of seventy soldiers in a recent epidemic of mumps presented nausea, loss of appetite and tenderness in the epigastrium. These symptoms were so intense by the sixth day in one case that they led to the discovery of pancreatitis as part of the clinical picture. The enlarged and tender pancreas showed vigorous pulsation from the aorta, but in a second case this phenomenon was not observed. It is probable that participation of the pancreas is responsible for the epigastrium symptoms in mumps. There seems to be a tendency to bradycardia in mumps, but none of the men showed any signs of nephritis. A child of 7 developed suddenly acute hemorrhagic nephritis during convalescence from mumps, but it subsided completely in a few days.

60. **Influenza.**—Lenz relates that he tried to have cotton and gauze masks used in his service at Davos during an epidemic in the winter of 1914-1915. They were made on the principle of an ether mask, and proved successful in preventing infection, but the personnel did not take kindly to the innovation. These masks were later used in some Swiss military hospitals. He suggests the possibility that the influenza virus may enter through the conjunctiva.

Demiéville remarks that the war is undoubtedly responsible for the virulence of influenza this year, on account of the repeated passage of the virus through different members of the hosts of men crowded into camps, etc., flocks of refugees, and crowds of industrial and other workers. He warns of the danger from giving drugs with a depressing action, including alcohol, and remarks that the out-of-bed management of pneumonia, strange to say, has always been extolled more by surgeons than by internists. He advocates emphatically, especially when the heart is irregular, to keep the patient sitting up in bed, or in an arm chair, for four or six hours a day—always, of course, having him lifted, without active cooperation on his part.

62. **The Suprarenals with Severe Burns.**—Nakata found the suprarenals evidently suffering from severe toxic action in cases of severe burns in human beings and in guinea-pigs and rabbits. There is evidently severe functional disturbance, sufficient possibly to explain the fatal outcome in some cases.

Gazzetta degli Ospedali e delle Cliniche, Milan

July 11, 1918, **39**, No. 55

63 *Suture of Wounds of Face. A. S. D'Emidio.—p. 534.
64 *Plastic Operation on Lower Lip. D. De-Francesco.—p. 538.

July 14, 1918, **39**, No. 56

65 Citelli Cell in Mastoiditis. P. Caliceti.—p. 544.

63. **Primary Suture of Lacerated Wounds of the Face.**—D'Emidio recalls that with fracture of the bones in the face, the natural cavities offer exceptionally favorable conditions for drainage at a low point. Hence the skin can be sutured at once in case of a war wound of the face, and the esthetic outcome compensates for the risk. He makes an opening into the adjoining natural cavity, if such does not already exist, and reports two cases which emphasize the advantages of immediate primary suture in these conditions. In both his cases the wound had been incurred the day before.

64. **Plastic Operation on Lower Lip.**—Illustrations are given of a case in which removal of a cancerous nodule just below the lower lip left an almost square hole, the angles at side and top. One of the tongue-shaped pieces of skin above, including the lip, was drawn to slant downward, to fit into the gap below the opposite corresponding flap. This left merely a linear gap shaped something like a Z. The skin was easily drawn up to close this gap, and the detached mucosa of the lip flap utilized to reconstruct the lip. The angular linear scar is now scarcely perceptible, a year later.

Policlinico, Rome

Sept. 15, 1918, **25**, No. 37

66 *Plastic Motor Surgery. (Sulle plastiche cinematiche.) G. Egidi.—p. 869.
67 *Treatment of Chronic Urethritis. G. B. Fazzari.—p. 874.

Sept. 22, 1918, **25**, No. 38

68 *Silver Nitrate Neutralizes Mustard Gas. G. Amantea.—p. 893.
69 *Modified Technic to Induce Pneumothorax. E. Curti.—p. 895.
70 Skeletal Anomalies and Traumatic Lesions. E. Bussa-Lay.—p. 897.

66. **Plastic Motor Surgery.**—Egidi describes three cases which demonstrate conclusively the ease and simplicity of plastic operations to supply a tunnel lined with sound skin in a position to utilize the muscular energy left in the stump. Two illustrations show the methods.

67. **Treatment of Chronic Urethritis.**—Fazzari applies a cylinder, cut out of a sponge, to the metal catheter, just below the rounding tip. This applies the medication exactly where it is needed and holds it there. The sponge does not show on the catheter as it is covered by a shell. This is removed in two parts when the catheter is in place, as is shown in the illustration. The elastic sponge dilates the urethra and scrapes it clean as the sponge is withdrawn at last. This exerts also a kind of massage, and the *irrigatore porta-spugna* has proved very useful in several years' experience with it.

68. **Silver Nitrate Neutralizes Mustard Gas.**—Amantea is assistant director of the Physiology Institute at Rome, and with many others he has been testing various means to combat the effects of the poisonous gases used in warfare. He has found that a 3 or 5 per cent. solution of silver nitrate seems to modify yperite or mustard gas—dichlorodiethylsulphid—to the point of annulling its toxic action. It does this even when the yperite has been some time in contact with the skin, following the yperite down into the depths of the tissues. He states that even with eye lesions from the yperite, the nitrate solution has proved effectual, but should be used for this in a weaker, 1 per cent. solution for instillation in the eye, or a 0.25 per cent. solution to rinse the eye with and to rinse out small wounds after thorough rinsing with water. With large wounds, a 1 per thousand solution can be used with proper caution. His research was done on animals and on himself. The mustard gas or fluid fastens to the superficial tissues at first and only very gradually works its way inward. The silver nitrate has a similar penetrating action, and in his tests neutralized the poison of the yperite when applied for ten or twenty minutes from one to nine hours later. He warns that the yperite should not be washed off with ether, chloroform or alcohol, as these promote its diffusion in the tissues.

69. **Induced Pneumothorax.**—Curti gives an illustrated description of his modification of the ordinary apparatus for artificial pneumothorax. With it the oxygen of the air is absorbed, leaving the nitrogen for injection.

Riforma Medica, Naples

Sept. 7, 1918, **34**, No. 36

71 Dilatation of Pulmonary Artery Revealed by Roentgen Rays. L. Coleschi.—p. 706.
72 *Serotherapy for Surgical Infections. R. Mosti.—p. 709.
73 *The Prevailing Epidemic. G. Sofre.—p. 712.
74 Pyogenic Dermatitis. V. Chirivino.—p. 714.
75 Status of Treatment of Cholelithiasis. E. Aievoli.—p. 715.
76 Status of Epidemic Poliomyelitis. G. Molinari.—p. 717.

72. **Serotherapy in Surgical Infections.**—Mosti relates that he long ago abandoned hypochlorite solutions and all other antiseptics as he obtained far better results with the polyvalent serum made by Lanfranchi and Finzi with many strains of microbes, not excluding anaerobes. He applies the serum locally by the Carrel technic in recent wounds without phenomena indicating sepsis. When there is sepsis, he administers it also by the subcutaneous or intravenous route. The surgical clearing out of the wound must be minutely thorough to begin with. Then the polyvalent serum displays a preventive and curative action against pyogenic bacteria, while it seems to exert a pronounced histoplastic action besides, stimulating tissue repair and permitting early secondary suture. He urges that the advanced posts should be supplied freely with this serum to use it copiously from the very first. He has had no mishaps with it, and all his experience points to its superior efficacy over antiseptics or any other method of treating wounds. The serum is made like the French Leclainche-Vallée serum, originally designed for veterinary use, but more strains of bacteria are used in its preparation. The effect is better in the recent, acute cases. Conditions in the knee are less favorable for this or any treatment than in other joints.

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of the patients being left with fistulas and one with a suppurating epididymitis. On the other hand, in five cases in which the suprapubic route was followed, the immediate and the remote results have been fine. The perineal technic has several disadvantages, among them the necessity for leaving a bridge of prostatic tissue. This remnant of tissue may serve as the source for renewed growth, while its presence prevents the bladder from regaining normal tone.

90. **History of Medicine in Mexico.**—Leon's data refer to the period after the university had been founded in 1553 and a medical department organized in 1582. The various documents, theses, etc., have been mostly preserved, and they throw light among other things on the American origin of syphilis. This is sustained by the sudden introduction of descriptions of syphilis into the medical literature at the close of the fifteenth century. There is no proof, however, that the syphilitic lesions found in ancient bones in America date from before Columbus' day. On account of the humidity in Mexico, very few prehistoric bones are found there, and as the burial places have been used for centuries since then, it is impossible to set any date for them. The same may be said of the descriptions of syphilitic lesions in the early Spanish writings in Mexico. The main work of one of these early Spanish writers, Juan de Cardenas, dated 1591, has recently been republished by the Museo Nacional of Mexico. He says of syphilis that nowhere in the world are its ravages so common or so severe as "in the Indias," meaning Mexico. . . . "It reigns there as if it were the fruit of the soil." He adds, "The nature of this contagious *mal de las bubas* is unknown, but it is not a modern disease. It is new to Europe, but I imagine that the Indians here have had it ever since they occupied the country, as it seems to be inherent in the land here on account of the heat and humidity." . . . "The Indians say that a man without some trace of this disease is not an honest man. It is so common here that the absence of bones in the face scarcely attracts a glance." The Inquisition was introduced into Mexico in 1571 and all books brought into the country had to be registered, and the shadow cast by the Inquisition checked the progress of medical science both in Old and New Spain. In 1592 the viceroy of Mexico complained to the king of Spain that "so many useless emigrants were sent out from Spain, *medicos y literatos,* when the demand was for *agricultores e industriales.*" Cortez founded a hospital in 1524, placing it in charge of a religious brotherhood, and the early foundation of more than thirty-six others is mentioned.

92. **Plotz' Alleged Typhus Bacillus.**—Fabela was unable to cultivate from the blood of fourteen typhus patients any bacilli resembling in the least Plotz' *Bacillus typhi.*

93. **Gonorrheal Joint Lesions in Infants.**—Prieto reports the cases of three infants of from 5 to 20 months old, with a catarrhal urethritis and multiple joint disturbances. The latter promptly subsided under immobilization alone. The gonococcus was found in the urethra or vulva.

Prensa Medica Argentina, Buenos Aires

Aug. 30, 1918, **5**, No. 9

97 *Cystic Sarcomas. P. M. Barlaro and A. Buzzi.—p. 89.
98 Atypical Degeneration of Retina in Adult. E. Dameno.—p. 90.
99 *Syphilis with Gastric and Duodenal Ulcers. R. E. Parody.—p. 91.
100 *Syphilitic Banti's Disease. L. L. Resio.—p. 92.

97. **Cystic Sarcoma of the Liver.**—Barlaro and Buzzi have been unable to find on record any case resembling the one they describe. The primary sarcoma was in the ovary, and the metastases in liver and lung were of a cystic type. The cystic tumors looked like giant graafian follicles, as is evident in the four illustrations.

99. **Inherited Syphilis in Etiology of Gastric Ulcers.**—Parody refers to Castex' recent publications on this subject as of fundamental importance. His views were summarized recently on page 320. Parody reports two cases as further evidence of the causal connection between syphilis and gastric ulcer. A young woman had a gastric ulcer and hematemesis, and investigation then revealed signs of inherited syphilis. Her mother had also had hematemesis on several occasions since puberty, and presented various signs of acquired syphilis. The rapid improvement in the daughter under specific treatment confirmed the diagnosis. For fear of bringing on the hematemesis anew, Parody gave calcium chlorid as a preliminary to the mercurial treatment.

100. **Banti's Disease in a Syphilitic.**—Resio argues that the prompt subsidence of the Banti syndrome under treatment as for syphilis testified to its syphilitic origin.

Revista de Medicina y Cirugia, Havana

Aug. 10, 1918, **23**, No. 15

101 Bacteriotherapy in Typhoid Group. M. M. Dominguez.—p. 409.

Aug. 25, 1918, **23**, No. 16

102 *Results of Operations on Biliary Apparatus. J. A. Presno.—p. 439.
103 *Elephantiasis. V. Pardo y Castello.—p. 449.

102. **Remote Results of Gallstone Operations.**—Presno remarks that the principal function of the gallbladder seems to be merely to maintain the balance of pressure in the bile passages. This function can be readily assumed by compensating dilatation of the common bile duct. This has evidently been the case in 18 of his 67 cholecystectomy cases, as there has been no disturbance of any kind from the loss of the gallbladder during the interval of five years or more since the operation. The group includes three women who have passed through normal pregnancies since. In another group of 21 cases, the cholecystectomy was supplemented by operations on the bile ducts, and in no instance have there been any disturbances from the bile apparatus since. In another case, chronic pancreatitis hampered the functioning of the sound biliary passages, and he implanted the gallbladder in the jejunum. All the symptoms, including those from the pancreas soon subsided to permanent recovery. The theoretical danger of ascending infection does not justify, he thinks, needlessly complicated operations in such cases. This patient has been in excellent health during the year to date. In conclusion he reports a case of what seems to be actual recurrence of gallstones.

103. **Elephantiasis.**—One of the three cases illustrated presents various manifestations of filariasis besides the elephantiasis, including chyluria and chylocele. The arms are the main seat of the elephantiasis in this case; in the third case, the scrotum. It reaches 10 cm. below the knees of the tall man.

Revista de Medicina y Cirugia Practicas, Madrid

July 28, 1918, **120**, No. 1516

104 *Retention of Pancreatic Secretion. L. Urrutia.—p. 97.
105 Sheet Lead in Treatment of Leg Ulcers. S. de Aja.—p. 101.

Aug. 21, 1918, **120**, No. 1519

106 Relations between the Pathology of the Skin and Internal Pathology. D. E. de Oyarzabal.—p. 193.

104. **Pancreatic Retention.**—Urrutia reports two cases which warn that the absence of the pancreatic ferments from the stools does not inevitably imply insufficiency of the pancreas. The outlet may be merely blocked; the amylase thus disappears from the stools and appears in the urine. The pancreas may become insufficient later from the disturbance in the circulation and sclerosis, but even with a cancer in the pancreas, the sound portion of the pancreas may long function perfectly.

Revista Medica del Uruguay, Montevideo

August, 1918, **21**, No. 8

107 *Prophylaxis of Anthrax. Committee Report.—p. 435.
108 Febrile Return of Uterine Cancer. F. Cortabarria.—p. 451.
109 *Echinococcus Cysts in Lungs. M. Legnani.—p. 458.
110 *Lethargic Encephalitis. L. Morquio.—p. 463.
111 Case of Cicatricial Stenosis of Larynx. J. C. Munyo.—p. 478.
112 Osteomas of Nasal Fossas. M. Quintela.—p. 481.

107. **Prophylaxis of Anthrax.**—The Sociedad de Medicina of Montevideo appointed a committee of three to study this question, and their report is an able summary of the present status of our knowledge of malignant pustule and means to avoid it. They regard as indispensable for prophylaxis the compulsory vaccination, by experts, of all animals susceptible of contracting anthrax. A certificate of vaccination should be exacted in sales of cattle and products from them, and other measures should be adopted to ensure this. They give a

circular to be posted in workshops, etc., warning of the danger of anthrax as a very grave and frequently fatal disease, and how it is acquired, and how avoided. The neck should be protected against it with special care, as the pustule is particularly dangerous in the neck. They describe a protecting device to be worn when handling hides, which protects against this. The committee refer in conclusion to certain ranches, etc., where vaccination has amply demonstrated its usefulness, without mishaps of any kind, and they reiterate that anthrax will be eradicated when all the susceptible animals are vaccinated. On the other hand, it now is increasing at an alarming rate.

109. **Echinococcus Cysts of the Lungs.**—Legnani's ten cases teach that this disease should be suspected whenever hemoptysis, small or profuse, develops without anything else to suggest pulmonary tuberculosis or embolism of cardiac origin, even when there is no primary cyst in the liver or elsewhere, and no stethoscopic or radioscopic findings on a single examination. He is convinced that many cases of echinococcus cyst escape detection, and he urges search for signs of it in the sputum, as many pulmonary processes, congestion, pleurisy, chronic bronchitis, etc., may be based on an echinococcus cyst, and simulate tuberculosis by their persistency. The entire absence of signs and symptoms beyond the hemoptysis was most striking in some of his cases, especially in the four boys, 10 to 15 years old, but also in some of the adults. He operated in all the cases, except those with spontaneous vomica and one in which the hemoptysis proved fatal. All the patients were cured at once.

110. **Lethargic Encephalitis.**—Morquio reports three cases which fit into the clinical frame of lethargic encephalitis as described by Netter, recently, in Paris and by Economo in Vienna in May, 1917. His patients were two girls of 10 and 12, and a boy of 13. All were taken suddenly with headache, fever, convulsions and unconsciousness, the stupor persisting till death the fifth and twenty-third days in the two girls. The boy recovered after a period of lethargy with slight meningeal reaction. Necropsy revealed a congestive and inflammatory process in the brain, superficial and diffuse, with apparently normal cerebrospinal fluid. There was no meningitis, no tumor. One of the children slept constantly as if in normal slumber, except for the ptosis and diplopia, headache and general depression, but no general disturbances and no fever. The somnolency gradually became actual coma, with death the twenty-thrd day. Tuberculous meningitis was excluded in all by the apparently normal lumbar puncture fluid. Another child presented a somewhat similar picture with somnolency predominating, but necropsy revealed a tumor of the pituitary body.

Semana Medica, Buenos Aires

June 20, 1918, **25**, No. 25

113 The Newly Born. U. Fernandez.—p. 683.
114 Tuberculosis of Hilum of Lung. J. B. Morelli.—p. 686.

June 27, 1918, **25**, No. 26

115 *History of Hygiene in Argentina. J. Penna.—p. 707.
116 *Treatment of Burns. H. Gregorini and O. Ivanissevich.—p. 708.
117 *Gastro-Intestinal Disorder in Infants. R. Cabrera and T. Scannavino.—p. 712. Commenced in No. 17, p. 465.
118 *Campaign against Tuberculosis. E. R. Coni.—p. 721.

115. **History of Hygiene in Argentina.**—This is the prologue to Coni's book, now on the press, "Memorias de un Medico Higienista." As he was official statistician and a pioneer in matters of public health and demography, as well as in medical education and administration, Penna says that his simple memoirs form practically the history of public hygiene in Argentina.

116. **Film Treatment of Burns and Leg Ulcers.**—Gregorini and Ivanissevich extol the benefits of film treatment of burns, relating several instances of rapid healing under the protecting film. They incorporate some methylene blue in the film they use, but do not give the formula. Leg ulcers rebellious to all other measures for months healed smoothly under it in about a month. After a hemorrhoid operation, the tube to be introduced for flatus is coated with the film, and the anus is covered with it around the tube. It is also useful after circumcision.

117. **Digestive Disturbances in Young Children.**—This serial article discusses the clinical picture with overfeeding, specific enteritis, etc. The writers emphasize that the statistics do not reveal all the mortality from injudicious feeding of infants, as the deaths are attributed to intercurrent diseases which the children might easily have weathered if they had not been so debilitated by the digestive disorders. They reiterate that the ignorance of the mothers is the main thing to be combated, and the only way to do this effectually is to teach in the schools the proper care of infants, impressing it on the schoolchildren by repeating the course and amplifying it year after year. Courses for adults should also be organized, as the most important and necessary part of hygiene is that which corresponds to alimentation of all ages. What is learned in childhood makes the most impression, and the lessons of puericulture and hygiene then inculcated will bear the most fruit.

118. **Campaign Against Tuberculosis.**—Coni reiterates that the campaign against tuberculosis is a function of the state, and that the national, provincial and municipal authorities should all take part in it. In order for it to be efficiently managed, the authorities should place the management in a single hand.

Siglo Medico, Madrid

Aug. 10, 1918, **65**, No. 3374

119 *Changes in Blood with Gastric Ulcer. S. Carro.—p. 633.
120 *Oxygen in Treatment of Rheumatism. C. G. Zabaleta.—p. 638.
121 *Practical Ophthalmology. D. J. and D. E. Wieden.—p. 639.

119. **Blood Changes and Gastric Ulcer.**—Carro rejects the assumption that hyperchlorhydria is the main factor in gastric ulcer, as ulcer may occur without it, while it may exist without development of ulceration. The composition of the blood and conditions of circulation seem to have more influence on gastric cancer than any other factor. The differential blood count may throw light on the intensity of the process and on the prognosis.

120. **Oxygen in Treatment of Rheumatism.**—Zabaleta reports that subcutaneous injection of oxygen has been systematically applied for several years and in thousands of patients with different forms of rheumatism, mostly subacute and chronic, at the dispensary in his charge. These experiences, he declares, have established the efficacy of this technic. It is a powerful adjuvant to other measures, and it is absolutely harmless with care to refrain from piercing a vessel. He usually injects 100 c.c. at the site of the pain, sometimes injecting all the larger joints at one sitting, using up 2, 4 or more liters. The blood afterward shows an increase in the reds and hemoglobin, and there is an increased output of urine and its urea content. A few examples are cited to show the great relief afforded, even in severe cases of long standing. One elderly woman with chronic nodular rheumatism for two years in hands and knees was relieved of all pain and inflammation by eight injections of oxygen. The urea output increased by more than double. The oxygen was injected into the dorsum of the hands and was massaged into the fingers. Rheumatic sciatica for two months in an elderly man yielded to ten injections at three day intervals; the improvement was pronounced after the first injection. The injections were made at the points of severest pain, the sciatic foramen and the popliteal and malleolar regions. In many cases of deforming rheumatism the disease seemed to be permanently arrested, besides the relief of all pain.

121. **Practical Ophthalmology.**—Wieden relates experiences with Barraquer's aspiration extraction of cataract in the capsule. He regards this technic as "one of the greatest achievements of surgery of the eye in current century, as it realizes the ideal operation for which all have been longing." (It was described in The Journal, June 9, 1917, 1789.)

Hygiea, Stockholm

August 31, 1918, **80**, No. 16

122 History of Medicine in Holland. V. Djurberg.—p. 921.
123 Further Discussion of Poliomyelitis. W. Wernstedt.—p. 955; K. Petren.—p. 964.

Sept. 16, 1918, **80**, No. 17

124 Medicolegal Service in Sweden. A. E. Bastman.—p. 977.

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THE SPECIALIST'S RELATION TO THE AMERICAN MEDICAL ASSOCIATION

AND A PLEA FOR GENERAL GORGAS' RETENTION IN OFFICE *

GREENFIELD SLUDER, M.D.
ST. LOUIS

When I was elected to this most important and flattering position last year, I felt that there were so many others that could have served the purpose better, that I was sorry for it, but as the year has gone by, I have felt more and more that my privilege was a very high and sacred one, and have done the best I could to merit it.

Rarely, I think, has a chairman had matters of such importance to present to the section. I have two subjects of the greatest interest to all medical men, namely, the position in which the Army medical service at present finds itself,[1] and our relation to the American Medical Association.

SECTION DIFFICULTIES

The second subject that I bring to your attention is our relations with the American Medical Association. I say our relations, by which I mean those of otolaryngologists and ophthalmologists. It seems that, according to the categories of the Association, we are the only ones thought of as specialists; or at least that is the impression that I get from reading the proceedings of the House of Delegates in New York City last year.

So we, as specialists, have a problem to present to the Association. In fact, however, almost every practitioner at the present time, at least the successful professional men in the larger cities, are, in reality, specialists. The whole field of medicine now-a-days is an absolute physical impossibility for any one man to compass satisfactorily and permit himself to say that he can do it all.

The specialties now include not only gynecology and genito-urinary surgery, formerly considered in the same section, but also gastro-enterology, etc.

The number of sections in the present meeting is fifteen. Each of these sections may be said to be a special section; but for some reason, the Trustees have not considered it so, and have selected us as men more or less outside the pale of interest for the general practitioner; and because our papers are "of no interest to the general practitioner," they propose to leave us out of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

We shall be permitted to meet as a section of the Association, to transact as much or as little business as we please; but our proceedings are to be ignored, as *they put it on* the ground that the cost of THE JOURNAL has increased very greatly. Later, they *passed a resolution declaring all section papers voluntary*, and to be edited.

That the cost of everything has increased greatly is familiar to all of us—painfully so. THE JOURNAL has shared in this increase, which might also be shared by us, just as we share in bearing the increased cost of everything else. If the cost of THE JOURNAL is beyond the subscription price of $5 at the present time, as a matter of business there can be no possible reason given why the price of THE JOURNAL couldn't be raised somewhat to meet the necessities of the publication at the present time. But that has not been the plan of action of the Trustees. They have elected to omit our papers, except when they see specially fit to publish one, and on second thought, to omit all other section papers they see fit.

At first thought, some of us might be indifferent to this rule, but on second thought, it seems to me that none of us can possibly be indifferent. We are medical men in sympathy with our fellow practitioners. We want to know what they are doing; and I can see no reason why we should not arrogate unto ourselves the idea that they should be interested, somewhat at least, in what we are doing.

THE CHARGE OF UNDUE TECHNICALITY

The Trustees have characterized our papers as too technical to be of interest to the general practitioner. They have also criticized the censorship exercised over the papers admitted to the program. We can readily understand that some papers may be very highly technical, and for that reason the author himself should consent to the publication, not of his full text, but of some small abstract which will point the way for the general practitioner, should he care to look the paper up. And if there is laxity in censorship, this not only might be, but should most decidedly be, corrected.

As a member of the section for a number of years, it seems to me that the papers presented before this body have been almost uniformly good, and worthy of presentation and of our time spent in listening to them.

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* Chairman's address, read before the Section on Laryngology, Otology and Rhinology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

[1] Concerning this subject statements were made relative to the retention of General Gorgas as surgeon-general. These are omitted from THE JOURNAL since General Gorgas was retired in October, having reached the age limit. The complete text appears in the Transactions of the Section.

The idea of being outcasts from the pages of The Journal seems to me such a calamity for us that I feel that special emphasis at this time should be laid on what The Journal of the American Medical Association is, and what are its possibilities for us.

Firstly, there is no journal in the country that reaches anything like the number of men that The Journal of the American Medical Association reaches. It is the only general journal; all the other journals are more or less local affairs. A parallel has been drawn between our country and Great Britain. This doesn't seem to me to be exactly a thing permitting argument. The Trustees have declared that the British Medical Association publishes only abstracts, and finishes them up in a very short time, possibly a few weeks.

The policy of the *British Medical Journal* is to publish the abstracts and finish them very quickly. The reader of the paper then has the privilege of publishing them anywhere. Physicians have the well known *Lancet,* in which their material may appear. There is no journal in our country that in any wise compares with the *Lancet.* We are left, then, if we have the desire to appeal to the general profession, to one journal only, The Journal of the American Medical Association.

It appears to me that this proceeding, by which we are ruled out of The Journal, is not only a disaster for us, but a disaster for the general profession. I cannot agree with the Trustees in their point of view, although I recognize by their names that they are a most estimable and intelligent body.

When they say that our work is of no interest to the general practitioner, they overlook the fact that almost all the general practitioners and general surgeons of the entire country at the present time will remove tonsils and adenoids if they have the opportunity of doing so, or at least they will try to remove them. They will also perform all the intranasal surgical operations that their intelligence permits them to suggest to the patient; and from an observation of such patients after having been operated on by the general men, we must all be struck with the idea that, if the general practitioner knew more about this work it would be not only to his advantage, but even more to the advantage of the patient. Many of the unfortunate results from which the patient suffers would be avoided. If the general practitioners are to continue in the practice of nose and throat surgery, then it behooves us from the same altruistic motive so emphasized by The Journal itself, as part of its plan of action, to educate the general profession as far as possible further along the line of the specialties for which they operate. Therefore, it is impossible to understand how any intelligent medical man can declare that the work of the eye, ear, nose and throat sections is of no interest to the general profession.

The Trustees have emphasized the fact that the papers are technical. Every now and then, it is true, there comes out a perfectly simple technical paper—a record of facts; but facts can never be properly valued at the time they are presented. Nevertheless, the record of a new fact is always justifiable.

A SPECIALIST'S DISCOVERY OF GENERAL INTEREST

Nothing can more clearly emphasize this point than the work of my friend, Dr. W. E. Shahan of St. Louis, who, four or five years ago, began the investigation of the effect of heat on the eye. He determined the cornea would stand a certain degree of heat without detriment. He then took up the question, "What is the degree of heat at which the various organisms are killed in the tissues?" and by experiment he found that at a temperature of 156 F. the pneumococcus was killed within the cornea. He devised a machine by which heat could be very accurately controlled, and this temperature applied to the ulcers of the cornea. It is perfectly well known that the pneumococcus is one that destroys the globe in the great majority of instances.

Through this bit of observation, Dr. Shahan has determined that the pneumococcus ulcer, heretofore so destructive, can be satisfactorily controlled in almost any case, as I understand it; and when the ulcers are beginning to form they are stopped and cured. The number of eyes that have been saved by this practice is unlimited.

The discovery has been turned to use for other purposes also, in other departments of ophthalmology. All of this was published in The Journal.

It is impossible for me to understand how an observation such as this can fail to be of interest to the general practitioner. It seems to me that if facts of this type cannot interest him, he is an exceedingly poor, low-grade sample of his kind. That there were such practitioners some years ago is perfectly well known; but certainly, as the years go by, that number diminishes. The men who replace them are of a different type. They are infinitely better educated, and of infinitely wider interests, not only in medicine, but in human affairs at large. Furthermore, the minute their interest in such observation is aroused, the working method by which such an end-result is obtained, would be worth, I should think, an inestimable figure to them.

Many of us would like to do original work, and we admire the men who do; but when, on asking ourselves, "Why don't we do it?" we admit to ourselves that we have no ideas. To follow the working of such an idea as that of Dr. Shahan must surely be a help and an inspiration to all who have any aspiration toward original observation.

Previous to Dr. Shahan's idea, various efforts had been made to apply heat to the eye for therapeutic purpose; but the fact that it was not known at what temperature the cornea or bacteria within the cornea were killed worked for the failure of these attempts.

It seems to me that with the difficulty now confronting the management of The Journal, we should all be sympathetic.

As a suggestion by which all may feel that they have fair play, I see no reason why a certain number of pages should not be allotted to each section, and these portioned out as may seem best to the authors on the program, by officers of the section. This would relieve the editorial staff of much work and would relieve us of the feeling that our affairs are possibly in the charge of a staff that is not only inimical to us, but ignorant of our rights as scientific medical men. It would give each section the best opportunity to maintain the high value and standard of The Journal, independent of its able editors and trustees.

ABSTRACT OF DISCUSSION

DR. WENDELL C. PHILLIPS, New York: I have taken pains to find some remedy for the situation which confronts not only this section but all of the sections of the Association. Talking will never accomplish anything. We must take more active measures to get at the facts. There are two sides to the situation, and many difficulties present themselves to the trustees in the management of this great American Medical Association. I have been simply amazed at the responsibilities as well as the care and the thought that is necessary in order that the work of the Association may be carried on well and that we may properly represent the membership.

I will suggest this, that this section and, if possible, the Section on Ophthalmology, appoint a committee with instructions that they consult with the Board of Trustees regarding the quesion of the publication of papers and to give the proper publicity to the papers read before this section and the Section on Ophthalmology. If you will look over the program you will have no difficulty in seeing that even in THE JOURNAL it would be impossible to publish all the papers and discussions together with the other things we are expected to publish during the year. It simply cannot be done, so that some censorship and care has to be taken, and some papers must be eliminated. But I do feel that an effort should be made—and usually it can be done if it is done in the right way—so that the sections and the central officers may have a proper understanding and adopt the best possible plan. I may say, however, that in so far as the specialties have adopted special journals under the auspices of the Association, general satisfaction has been obtained.

DR. L. W. DEAN, Iowa City, Iowa: Last year the executive committee of this section was instructed to confer with the Board of Trustees in regard to the publication of papers read before this section, and there also is a committee from the section to report on the method of publication.

DR. WENDELL C. PHILLIPS: So far as I know no such matter has been brought before the Board of Trustees during 1918.

DR. GREENFIELD SLUDER, St. Louis: Dr. Phillips has been exceedingly helpful in giving us some needed information. The procedure by which we were outcast was one in which we had no part and in which we were denied a part. When I stated that the difficulties of THE JOURNAL should be considered sympathetically, I meant precisely what I said—I selected the term to the best of my ability.

Carbon Tetrachlorid Vapor as a Delousing Agent.—M. H. Foster, Surgeon, United States Public Health Service, in *Public Health Reports*, October 25, makes a preliminary report on experiments for the killing of lice in the clothing by the vapor of carbon tetrachlorid. Heat and hydrocyanic gas are probably the best agents for killing lice but require somewhat complicated apparatus for their use and can be used to advantage only where the work is to be done on an extensive scale. The object of the experiment was to find some agent that could be used practically anywhere and for small operations. It was found that carbon tetrachlorid vapor was effective after two hours' exposure with the clothing rather closely packed in a tin or other vessel that is air tight, in an amount of 25 c.c. The material to be disinfected should not occupy more than half or two thirds of the containing vessel. In the experiments only the lice were killed. The nits were only partly killed, but their hatching was delayed. The method used was simply to pack the material to be disinfected in the can, on top of which were placed several layers of filter paper on which was poured the carbon tetrachlorid. The can was then covered with several thicknesses of toweling and a loose cover placed over this. In some experiments, the lice infested material was wrapped up tightly in papers, etc., and various combinations of carbon tetrachlorid with gasoline, were tried. The unadulterated carbon tetrachlorid was found to be best and the lice were always killed in about the time mentioned. At the present price of carbon tetrachlorid, the cost for treatment of the clothing of one soldier will amount to from 1½ to 5 cents.

ACROMEGALY OF THE LARYNX *

CHEVALIER JACKSON, M.D.

PHILADELPHIA

The literature of acromegaly contains but little reference to the larynx, which seems strange in view of the fact that in a number of cases alteration of the voice is mentioned. I hope that the herein recorded cases will lead to systematic examination of the larynx not only in every case of acromegaly but also in every case of hypophysial abnormality. It is to call attention to the necessity for this that the four cases are reported. Complete reports of all the cases would require too much space and would detract from the emphasis desired to be placed on the laryngeal phases:

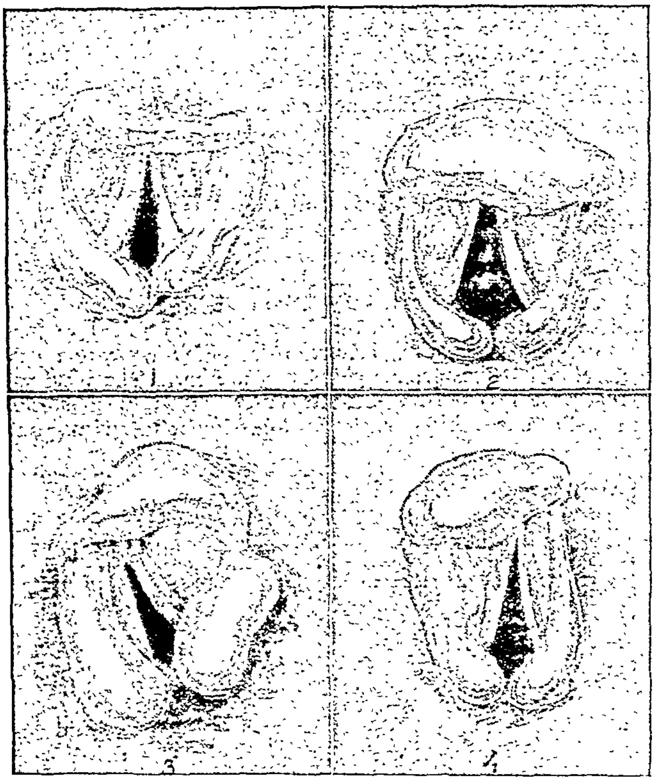

Fig. 1.—Acromegaly of the larynx. The enlargement and thickening of the various prominences of the larynges are bilateral. The asymmetry seems rather a distortion, though at 4 is shown a larynx with elongation of one aryepiglottic fold associated with thickening of its fellow. The larynx shown at 3 was so suggestive of the typical acromegalic hands as to merit the appellation of "gingerbread larynx." The whole larynx by external palpation seemed symmetrically enlarged in all cases except the one shown at 2, in which the overgrowth was limited to the epiglottis.

REPORT OF CASES

CASE 1.—*History*.—A man, aged 43, complained of remittent shortness of breath of two years' duration. Breathing was noisy at night. Repeated "asthmatic" attacks culminated in a severe dyspneic attack two weeks before. A laryngologist arrived in time to do a tracheotomy and save the patient's life. A diagnosis of laryngeal cancer was made and the patient was referred to me.

Laryngeal Examination.—External palpation of the larynx revealed it to be of enormous size, the enlargement seeming even and symmetrical. Laryngoscopic examination showed a general overgrowth of the larynx. The epiglottis, aryepiglottic folds, ventricular bands and vocal cords were proportionally enlarged. An appearance of asymmetry was given by the deviation of the long axis of the glottis, which, instead of being sagittal, was deviated to the left posteriorly (3, Fig. 1). The glottic chink was very narrow and was insufficient for breathing. The left aryepiglottic fold was as much thickened as the right, but was not so long. The whole laryngeal image was strongly suggestive of the facies (Fig. 2) and "gingerbread hands" (Fig. 3) of acromegaly. This, with the suggestive facies of the patient led to an investigation which revealed the case to be one of acromegaly, the diagnosis of which had not previously been made. Questioning elicited the fact that when 23 years of age (Fig. 4) the patient wore a number 8½ shoe, and a 15 collar. At the time of examination, twenty years later, he wore a number 9½ shoe, and a 16½ collar.

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* Read before the Section on Laryngology, Otology and Rhinology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

Roentgenographic Examination (by Dr. George C. Johnston).—The pituitary fossa is 1¼ inches anteroposteriorly and 1 inch deep. There is a pressure atrophy of the posterior clinoids and of the roof of the sphenoidal sinus. The roof of the sinus is crushed in. There is obliteration of air cells, the anterior lobe of the pituitary resting largely within the sphenoidal sinus. Frontal and maxillary sinuses are very large and clear. There is but little evidence of pressure on the anterior clinoidal region; therefore the bitemporal hemianopsia which we can expect to develop later is probably not yet present. The pituitary enlargement may be expected to encroach on the posterior lobe with a resulting posteror lobe hypopituitarism, and I should expect as the disease progresses that this patient will show epileptiform manifestations. It may be that the glottic spasm for which tracheotomy was necessary was partially of this nature. The roentgenogram of the larynx (Fig. 5) shows increased density in all the cartilages of the larynx and an apparent calcification of the stylopharyngeus muscle. The superior cornu of the thyroid cartilage is also very distinctly seen to be elongated, especially the left. The patient is an acromegalic in an advanced stage, showing characteristic gingerbread hands and rough hewn face with African nose.

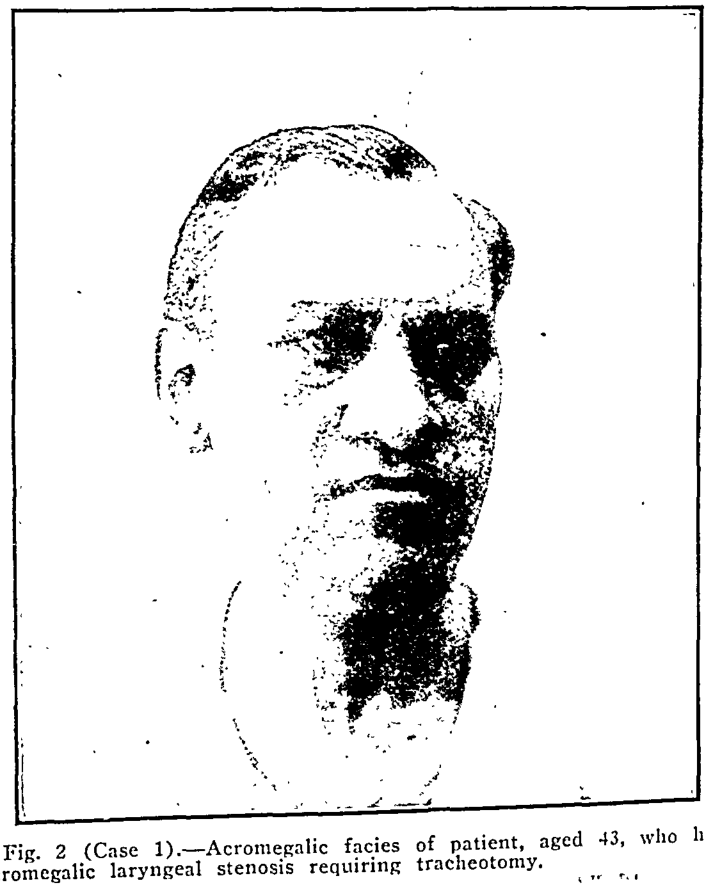

Fig. 2 (Case 1).—Acromegalic facies of patient, aged 43, who had acromegalic laryngeal stenosis requiring tracheotomy.

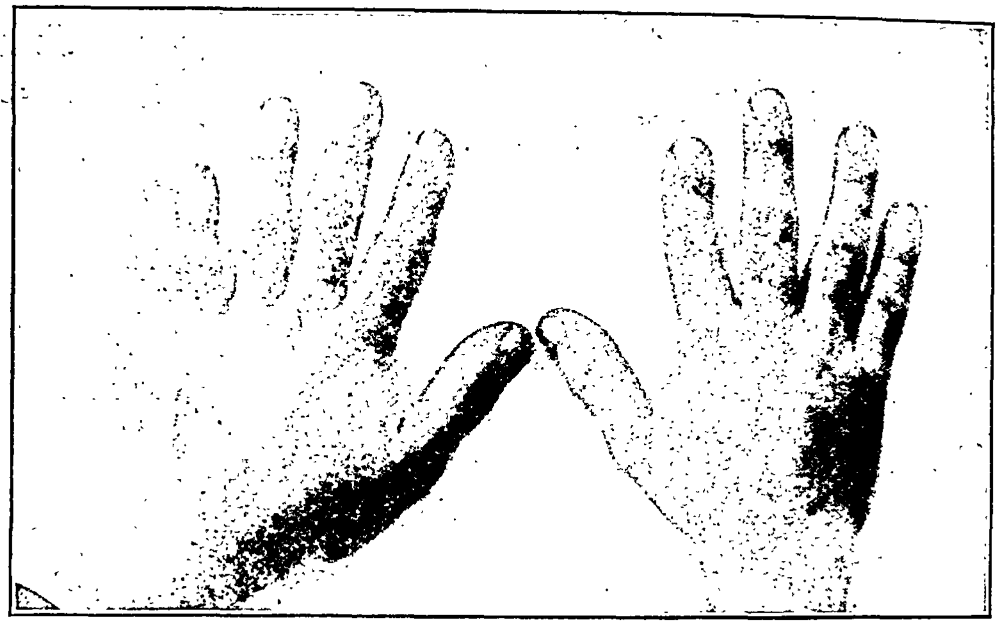

Fig. 3 (Case 1).—"Gingerbread" hands.

The attending laryngologist was advised to send the patient to Dr. Harvey Cushing for study; but before this could be done the patient died suddenly at his home, apparently of asphyxia. No necropsy was obtainable.

Case 2 (Abstract).—A minister, aged 42, was referred for laryngeal examination because of impaired voice, which in recent years had become very harsh and weak. Laryngeal tuberculosis was suspected by the laryngologist in attendance. Palpation revealed a symmetrically enlarged larynx. Indirect laryngoscopy showed the epiglottis thickened. The left aryepiglottic fold was thickened near the epiglottis. The right aryepiglottic fold was elongated (1, Fig. 1). The movement of the right arytenoid was impaired. A diagnosis of acromegalic larynx was made because of the laryngeal overgrowth covered with normal mucosa, in a man with the following general signs of acromegaly: gradual increase in the size of hat and shoes required, enlargement of the external nose, the malar prominences, and the lower jaw. These changes were sufficient to be unmistakable once attention was called to them, but they were not striking; hence the diagnosis of the general malady had not been made by the regular medical attendant. This patient was seen before the days of the usefulness of the roentgen ray in diagnosis of pituitary disease was developed.

Case 3 (Abstract).—A woman, aged 33, referred for consultation as to supposed tuberculosis of the epiglottis, had a masculine voice, and indirect laryngoscopy revealed a thickened epiglottis somewhat suggestive of the turban shape often seen in tuberculosis; but the thickening was more irregular, and all the usual appearances of a laryngeal tuberculosis were absent. The mucosa was normal (2, Fig. 1). A diagnosis of acromegalic overgrowth of the epiglottis was made on the basis of the following general signs: nose enlarged, forehead somewhat retreating, both ears enlarged, finger rings had become so tight as to require sawing to remove them. Hypophysial disease was revealed by roentgenography at Western Pennsylvania Hospital. The masculine character of the voice with a normal laryngeal interior pointed to changed resonating cavities, though of course the character of the normal male voice is partly due to laryngeal differences.

Case 4 (Abstract).—The patient was referred for supposed lupus of the larynx, the diagnosis being based largely on a scar on the nose which the patient attributed to a "boil." Indirect laryngoscopy revealed a larynx very much elongated anteroposteriorly, the left aryepiglottic fold being fully half again as long as normal, the sagittal length of the glottic chink being increased by about one third. The epiglottis was overgrown to about thrice its normal thickness, and it was tilted at an angle of about 10 degrees. The right aryepiglottic fold was overgrown in all directions with a nodular thickening near the epiglottis (4, Fig. 1). The mucosa was chronically inflamed. A diagnosis of acromegaly of the larynx was made because of the following general signs of acromegaly; facies, gingerbread hands, kyphosis, and projecting os calcis. Disease of the hypophysis was demonstrated by Dr. Russell H. Boggs.

CONCLUSIONS

Four cases are too few for final conclusions, but the following points seem important:

1. The larynx should be examined in every case of hypophysial abnormality.
2. The overgrowth characteristic of acromegaly in some cases involves the laryngeal cartilages and soft parts.
3. Acromegalic changes in the larynx may produce stenosis sufficient to require tracheotomy to prevent asphyxia, dyspnea being added to by impairment of the glottic movements, resulting in a defective bechic cycle.
4. In three out of four cases, the laryngeal mucosa was normal. In one, the chronic laryngitis present was probably a coincidence.
5. In three of the four cases, the laryngeal image was not symmetrical, though the laryngeal enlargement seemed so by external palpation.
6. In all cases of apparent hyperplasia of the larynx, acromegalic overgrowth should be listed for diagnostic exclusion.

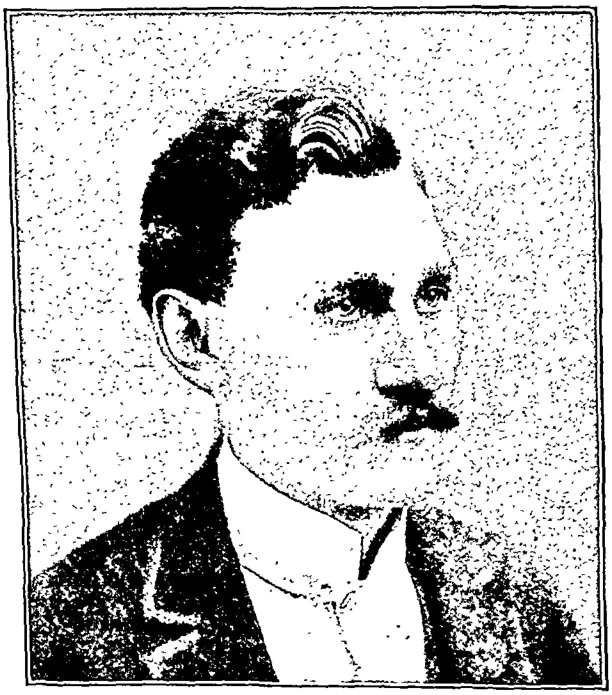

Fig. 4 (Case 1).—Patient at the age of 23.

7. Laryngeal examination should be recorded as a routine in all cases of hypophysial abnormality, for the accumulation of data.
8. Altered voice in acromegaly may be due to laryngeal changes as well as to alteration in the resonating cavities, lingual enlargement, etc.

ABSTRACT OF DISCUSSION

Dr. William B. Chamberlin, Cleveland: I would like to ask Dr. Jackson if the general signs of acromegaly are essential, and in the absence of other signs how he would differentiate these cases from rhinoscleroma?

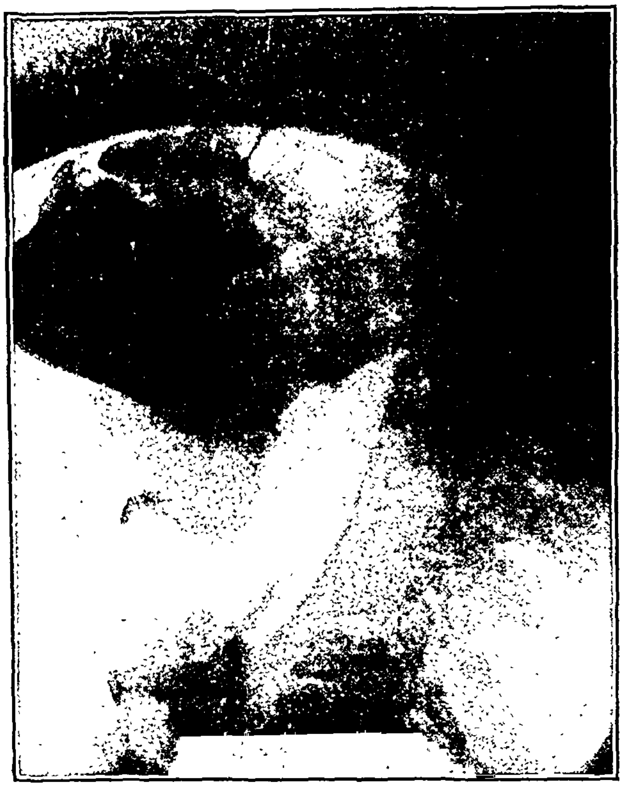

Fig. 5 (Case 1).—Overgrowth and ossification of the thyroid cartilage with extensive elongation, especially of the left cornu. (Roentgenogram by Dr. George C. Johnston.)

Dr. Chevalier Jackson, Philadelphia: Dr. Chamberlin brings out an exceedingly important point and I wish I could answer it. It has often been said of medical men that they get one case and make sweeping generalizations from it, and we often do. In this instance, there are only four cases, and, therefore, broad generalizations seem unjustifiable. I do not believe anybody could make a diagnosis of acromegaly by laryngoscopic examination alone: it would require the corroboration of the general symtomatology. As to the local points of differentiation between laryngeal acromegaly and rhinoscleroma, I feel that Dr. Chamberlin has raised an important point, but one that I cannot answer on the experience of only four cases.

For the present we must rely on the symptoms outside the larynx.

Removing Joint and Muscle Disabilities.—It is of the utmost importance to understand the use that can be made of a man's sound limbs to enable him to recover the use of an injured one. Attention is too much centered on obtaining some anatomically correct movement; meantime all the other limbs are allowed to remain inactive, and if the anatomically correct movement cannot be obtained, then the case is given up as incurable. Such concentrated treatment ignores the value of associated movements of joints brought about by the muscles passing over one or more joints. Take the case of a man who cannot flex one joint of the upper or lower limb, or who can only partially flex a joint. In addition to any special effort to flex that joint singly, it is important to get him to flex all the sound joints of the limb, which all tends to make him capable of flexing the injured one.—Col. H. E. Deane, Gymnastic Treatment for Joint and Muscle Disabilities.

THE TREATMENT OF GENITAL TUBERCULOSIS IN THE MALE *

WILLIAM C. QUINBY, M.D.
BOSTON

For the intelligent and therefore successful treatment of any surgical ailment an exact knowledge of its pathology and mode of invading the various structures of the body is most important. In the case of tuberculosis of the male genitalia such exact knowledge is in some respects lacking; especially in regard to the structures primarily attacked by this disease. At the present writing, the majority opinion holds that the first structure to become involved in the tuberculous process is the epididymis, and that from this the disease quickly spreads to involve the vesicle and prostate. A smaller number of investigators feel that the disease begins its genital invasion in the prostate, spreading from there to the vesicles and epididymis. This is a question which has long been argued, and is of much more than mere academic importance, because only by eradicating the primary focus may we expect the greatest number of cures.

In accordance with this majority opinion, that the tuberculous process begins in the epididymis, the operation of removal of this structure has been widely employed and in some instances has undoubtedly been followed by excellent results. By the operation, not only is the suppurating or tender focus in the scrotum disposed of, but also further disease either in the testis, or in the prostate and seminal vesicle may become quiescent. But that such a fortunate result cannot always be expected, and that our attempts to cure tuberculosis of the male genital tract by epididymectomy thus far leave much to be desired may be easily seen from the statistics collected by many surgeons. To mention two writers, Keyes[1] says, in speaking of tuberculosis of the testicle, "Relapse on the opposite side almost inevitably occurs." And from his table, it may be seen that, of fifty-three relapses in the other epididymis, forty-six had occurred within one year after operation on the side primarily diseased. Barney[2] says:

> It is a characteristic of the disease to attack the opposite epididymis in over one-half the cases, within a year or two of the time of involvement of the first side. This catastrophe occurs in spite of all efforts to prevent it, but early excision of the epididymis first attacked will improve the chances for the escape of its fellow.

Results such as these are hard to explain if we assume that the disease process is primary in the epididymis. On the other hand, they are easily explained if we consider the prostate and vesicles to be the point of first attack. If this assumption is made, it is evident that the focus nearer the center, untouched by the removal of the epididymis, is still present, ever ready to involve the second epididymis in the same manner as it did the first.

In what percentage of cases of tuberculosis of the epididymis are the prostate and vesicles free from this disease? It is evident that in the answer to this question lies the solution of our perplexity. The sources of evidence on which to base the answer thus far made use of are mainly two: necropsy findings, and clinical examination of the prostate and vesicles by digital exploration. Large series of postmortem statistics have been examined by various men, with the result that in an overwhelming majority of the cases the tuberculosis is found to involve the whole genital tract, at least on one side. Though a few isolated instances are recorded in which only the epididymis, the vesicle or the prostate was the seat of the disease, the number of such cases is far too small to be of weight in demonstrating the usual point of first attack. This can mean only that by the time the patient dies, the disease has progressed so far that its exact genital origin is obscure.

The clinical evidence that may be brought to bear on this question is even more insecure than is the postmortem, for it is admitted by nearly all clinicians that it is frequently impossible to detect the presence of tuberculosis in the prostate or vesicles, though the tuberculosis in the epididymis is obvious. On the other hand, Keyes makes the statement that every case of tuberculosis of the testis (epididymis) examined during ten years showed some involvement of the prostate.

For final conclusive evidence, it is therefore clear, I think, that we must turn to the "pathology of the living," that is, to the evidence obtained from histologic examination of tissue removed or investigated at operation. Though it may well be beyond the usual opportunity of any one of us to bring together an amount of such operative material adequate for the complete proof, nevertheless if the continued efforts of many working toward this end are made, we shall soon have our answer. It is, then, with the hope of stimulating a more general interest in this subject among urologists, rather than with the feeling that I am yet able to bring any final word on the subject, that I present this paper.

INVOLVEMENT OF OTHER ORGANS IN TUBERCULOSIS OF THE EPIDIDYMIS

As partial answer to the question, "In what percentage of cases of tuberculosis of the epididymis are the prostate and vesicles free from disease?" I am able to offer the histories of seven cases seen during the past two years at the Peter Bent Brigham Hospital. These patients have all been treated by complete removal of the whole of either one or both seminal tracts. The operation usually performed consisted of a unilateral vesiculectomy, vasectomy and epididymectomy; the operator using practically the same method which Dr. Young[3] has recently published. A small area of prostate was also removed when it could be demonstrated to be diseased.

Stated briefly, the answer which these cases bring to our question is that in *no* case were those structures central to the epididymis found free from tuberculosis, and that therefore the percentage is zero. Of course, I do not expect this result to obtain when a much larger accumulation of such operative evidence is available. It is interesting, nevertheless.

It is also of interest to note that, though I have been unable to find an epididymis which was tuberculous without there being at the same time a demonstrable tuberculosis of some more central portion of the genital tract, there has come under my observation a case of tuberculosis of the prostate in which the process was confined to this organ, or at least in which the epididymides showed no abnormality. The patient was operated on by prostatectomy, and has thus far shown no tuberculosis elsewhere in the genital tract. It is added to the cases herein reported, which may be briefly summarized here.

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* From the Urological Clinic of the Peter Bent Brigham Hospital, Boston.

* Read before the Section on Genito-Urinary Diseases at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

[1] Keyes: Tuberculosis of the Testicle; Observations on 100 patients, Ann. Surg., 1907, **45**, 918-937.

[2] Barney: Genital Tuberculosis, Mod. Urol., 1918, **1**, 498.

[3] Young, H. H.: Presentation of a Radical Operation for Tuberculosis of the Seminal Tract, Surg., Gynec. and Obst., 1918, **26**, 375.

The average age of the patients was 28, the oldest being 33 and the youngest 25. Four were single and three were married. The time from onset of evident disease in the epididymis till operation averaged about three months, with one exception in which the process was present for two years and nine months. In two cases both prostate and vesicle gave palpatory evidence of being diseased, while in three cases the vesicles only could be positively felt to be abnormal. In two cases the rectal examination was entirely negative. In three cases the urine contained pus; in four it was normal. In no case could evidence of renal or bladder tuberculosis be demonstrated. Five patients had a discharging sinus in the scrotum before presenting themselves for operation.

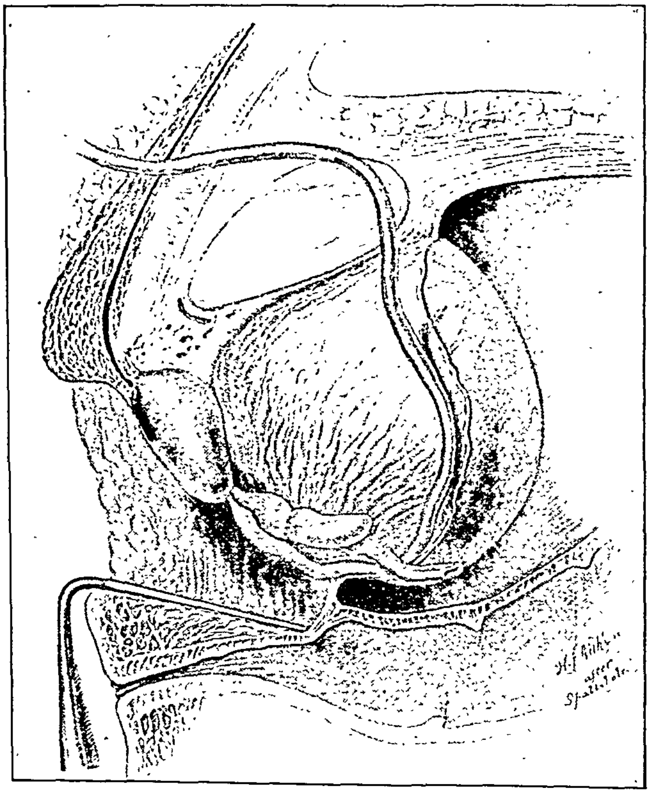

Fig. 1.—Sagittal section of male pelvis showing approach to vesicle by division of structures which unite the rectum and bulb of urethra. Note relation of ureter to vas and also pouch of peritoneum behind bladder.

CLINICAL RESULTS OF OPERATIONS

Each of these patients has been seen within the past month, six having reported personally at the hospital. One was seen by the nurse of the social service department. Only one patient has done badly and this poor result is clearly due to an error of surgical judgment in not removing the whole of a very evidently and extensively diseased vesicle. Two months after this operation, the other epididymis and testicle became extensively diseased and had to be removed. The patient is now well. With this exception, the history after operation in each of the remaining cases has been one of apparent return to complete health. In no other of them has there been any evidence of further extension of the tuberculosis. One patient underwent an acute infection by the gonococcus fifteen months after operation, and after four weeks of self-medication this resulted in an acute gonorrheal epididymitis of the side not operated on.

The average time since operation is thirteen months. This is not nearly so extensive a time as is necessary for conclusions in regard to recurrence of tuberculosis. I am sure that it is sufficient, however, to demonstrate that this more radical method of operation does not carry with it any unusual or unjustifiable complications or risks. I have not attempted the operation, however, in any case which showed signs of active tuberculosis elsewhere in the body.

CASES OF TUBERCULOSIS OF EPIDIDYMIS TREATED BY EXCISION OF ENTIRE SEMINAL TRACT

Case 1 (No. 5920).—*History.*—A student, aged 25, single, Dec. 18, 1916, complained of swelling and discharge from right testicle for four months. The family history and past history were both negative. There was no venereal disease. Four months previous to consultation, while working as a porter in a summer hotel, the patient had lifted a heavy piece of ice and noted pain in his right testicle. The pain had been followed by swelling, which had lasted from four to five days, at the end of which time the patient had seen a doctor. The doctor had aspirated it, obtaining a small amount of bloody fluid. The pain had then disappeared, but the swelling had remained, had increased slightly in size, and through the aspiration point, the patient had had a yellowish discharge. There were no night sweats, no cough, no urinary disturbance and no loss of weight.

Physical Examination.—Lungs were negative. Over the lower pole of the epididymis on the right was a small sinus discharging a thin, seropurulent material and here the skin was slightly puckered. The epididymis was considerably enlarged throughout but was not tender. The testicle appeared to be normal. The left testis and epididymis were not remarkable. The rectal examination was negative. The urine was normal.

Dec. 19, 1916, right vesiculectomy, vasectomy and epididymectomy were performed. The structures removed included an adjacent nodule in the prostate.

Jan. 4, 1917, the patient was discharged after a rather stormy convalescence. He had to be catheterized for several days, and the perineal wound oozed considerable bloody serum. The perineum had nearly healed on his leaving the hospital.

Pathologic Report.—The patient was suffering from tuberculosis of the epididymis, vas, seminal vesicle and prostate.

Subsequent History (outdoor department).—Jan. 12, 1917, the perineum was healed, and the scrotum nearly so. There was considerable induration in the right scrotum and cord but this was not tender. Erections had been present. There was no difficulty in regard to urination. The urine was clear, with a few granular shreds. It was passed at normal intervals.

Feb. 10, 1917, the patient had gained 8 pounds. The scrotal wound was not then entirely healed.

March 10, a sinus appeared in the perineum discharging a few drops of pus intermittently.

August 24, the sinus remained closed almost entirely. The patient had been working hard and had lost a few pounds of weight previously gained. He was put on a course of tuberculin.

October 1, during the summer vacation the patient showed marked improvement. There had been no further discharge from the sinus since the last note. He had gained about 15 pounds.

May 28, 1918, the patient reported that although he had been working hard during the past school year, his health had been excellent. Examination on this date proved both testes normal, the right being minus its epididymis. By rectal palpation, the prostate felt normal, but there was a small depressed area at its upper right side over which the rectal mucosa was puckered. The left vesicle could not be palpated. The expressed prostatic secretion was normal under the microscope and no pus was found. Spermatozoa were absent, however. The urine was normal in all respects.

Case 2 (No. 5880).—*History.*—Dec. 11, 1916, a laborer, aged 27, single, complained of swelling of the scrotum. The family history was negative. There was a rather vague history of pleurisy five year's previously and of gonorrhea eight years previously. The trouble began about six months before with pain in the groin and the scrotum. At this time an incision was made in the scrotum, which continued to discharge. A week previously the swelling and tenderness had increased. There were no urinary symptoms. The patient thought he had lost some weight but he did not know how much.

Physical Examination.—The lungs showed a slight increase of dulness with prolongation of expiration on the right at the apex. The roentgenogram was negative except for slight haziness in the region of the right apex. The left testis was three times its normal size on account of involvement of the whole epididymis. In the region of the lower pole, the skin was adherent about a sinus tract. The contents of the right scrotum were normal. The left cord was definitely thickened. By rectal palpation, no abnormality could be felt in the prostate. The left vesicle was definitely thickened, the right questionably so. The microscope showed that the urine contained a little pus and blood.

Dec. 13, 1916, vesiculectomy, vasectomy, epididymectomy and orchidectomy were performed on the left side. No evidence of prostatic involvement was to be seen. The right vesicle was normal, the left enlarged and adherent. Orchidectomy was done on account of an extensive necrosis of the testis.

December 23, the inguinal incision still discharged considerably and had become slightly infected. The perineal wound was nearly healed.

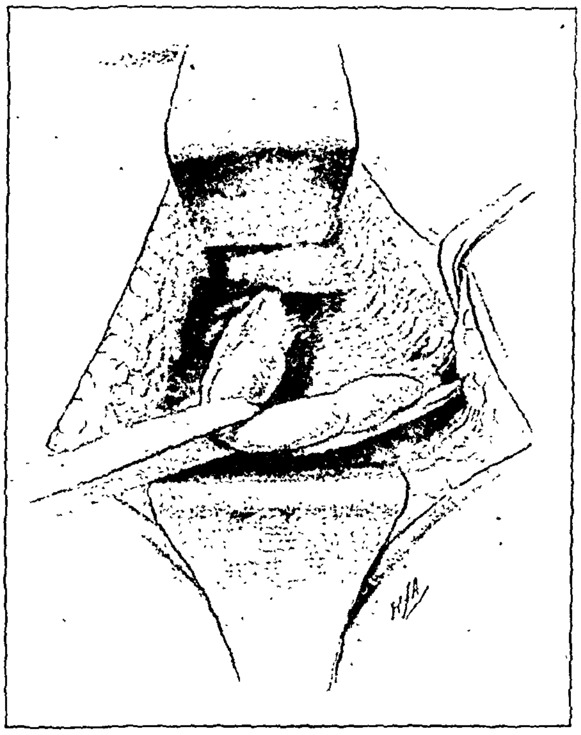

Fig. 2.—Method of traction on vas and vesicle after they have been separated from the base of the bladder.

Jan. 3, 1917, the inguinal wound was completely healed. The wounds in the lower part of the scrotum (area of original sinus) and the perineum still discharged a little. The urine was normal. The patient was sent to the outdoor department for dressings.

Pathologic Report.—He was suffering from tuberculosis of the testis, epididymis and seminal vesicle. The patient continued to have dressings for the slowly healing sinus in the outdoor department till Sept. 13, 1917. His general condition was excellent.

Subsequent History.—March 19, 1918, he reentered as No. 8392. Almost two months later he had acute urethritis five days after exposure. He used self medication in part and had a swelling and tenderness of right epididymis. Gonococci were found in the urethral discharge. His fever rose as high as 103 F. No tenderness was discovered by rectal palpation.

March 29, 1918, the process had run the usual course of a gonorrheal epididymitis. There was then much less soreness and swelling and the urethritis was only moderately severe. No evidence of recurrent tuberculosis had been seen. The patient was discharged to the outdoor department.

May 1, 1918, he was still under treatment for prostatitis. The epididymis was practically normal, except for an occasional small nodule. The urine was clear, without shreds.

Case 3 (No. 6017).—*History.*—Jan. 4, 1917, a butcher, aged 28, married, complained of swelling and slight pain in the left testicle. The family history was negative. He had had gonorrhea nine years before. He had not lost weight. He had been married seven years, and six years previously had had a child. Three and one-half months before consultation, the patient fell, striking the lower part of his back. A week later the testis began to swell and grow painful. For two weeks it had grown worse and had remained of the same size since. Walking was painful, though somewhat helped by a suspensory. There were no urinary symptoms.

Physical Examination.—The lungs and the right genitalia were normal. The left scrotum was twice the size of the right. The upper pole of the epididymis was nodular and hard, and the rest of the epididymis was definitely thickened. The cord was somewhat thickened. The skin was not adherent. By rectal palpation it was found that the left vesicle had one nodule near its top which could not be expressed, otherwise the rectal examination was negative. The urine was normal.

Jan. 6, 1917, left vesiculectomy, vasectomy and epididymectomy were performed. The vesicle was only slightly adherent. One small nodule in the prostate at the entrance of the ejaculatory duct was excised.

Jan. 9, 1917, the wounds were clean and healing well.

January 14, the patient was discharged after an uninterrupted convalescence.

Pathologic Report.—The patient had tuberculosis of the prostate, the seminal vesicle and epididymis.

Subsequent History.—Jan. 23, 1917, the wounds were solid. There was an entire absence of tenderness by rectal palpation. The rectal mucosa was more thick and velvety than usual over the prostate. The remaining vesicle was not palpable. The patient soon gained in weight. He was put through a course of antituberculous hygienic treatment.

May 27, 1918, the patient came to report. His health had been excellent since the operation. He had gained 4 or 5 pounds. He had coitus normally three or four times a week, but his wife had not borne a child since the one of six years ago. Both testes were rather small and somewhat atrophic. The left one, except for the absence of the epididymis, was the same as the right. The rectal examination was normal except for a few small adhesions of mucosa to the underlying structures. There were no urinary symptoms. It was impossible to obtain prostatic secretion by expression for examination. The urine was normal.

Case 4 (No. 6698).—*History.*—May 7, 1917, a storekeeper, aged 30, single, complained of a swelling of the testicle. The family history was negative. He had not had gonorrhea.

March 5, 1917, he had observed on walking that the left testis was swollen, tender and painful. He had stayed at home five days on account of the pain. The swelling had gradually decreased, but had not disappeared. Ten days previous to consultation, he had observed a soft area at the lower part of the scrotum which had broken and discharged pus a day before. There were no urinary symptoms. During the previous six months he had lost 8 pounds.

Physical Examination.—The lungs were normal. The left testis was slightly enlarged. The epididymis was swollen hard and nodular in both the upper and lower poles, and the lower part of the swelling had become adherent to skin about a fistulous tract. The cord was not thickened. The contents of the right scrotum were normal. No involvement of the prostate or testicles could be palpated. The urine was normal.

May 8, 1917, vesiculectomy, vasectomy and epididymectomy were performed on the left side. The left vesicle was found very rudimentary and evidently not diseased. No diseased areas of the prostate could be palpated. The ampulla of the vas was somewhat thickened.

May 20, 1917, the patient had made an absolutely uninterrupted convalescence and was discharged to the outdoor department for dressing of a small sinus in the scrotum.

Pathologic Report.—The patient had tuberculosis of the ampulla of the vas deferens and of the epididymis.

Subsequent History.—May 24, 1917, in the outdoor department, a stitch, which was causing slight discharge from the scrotum, was removed. A dry dressing was used.

June 6, 1918, he was seen by the nurse of the social service department. He had been entirely well since the previous visit.

Case 5 (No. 7266).—*History.*—Aug. 24, 1917, a sailor, aged 26, single, complained of deformed testes. The family history and past history were negative. There was no evidence of tuberculosis.

In May, 1914, he hurt his testicles in jumping a fence, and two days later passed bloody urine, with no pain, however. The condition lasted three weeks and stopped suddenly. The patient did not stop work. The left testis was at first swollen, then gradually diminished to the size of a robin's egg. He was then well till September, 1914, when the right testis became sore and swollen at the lower end. The swelling persisted but the pain disappeared.

August, 1917, the left side, which had been small since May, 1914, began to swell again in the lower pole, and to be painful. There were no urinary symptoms.

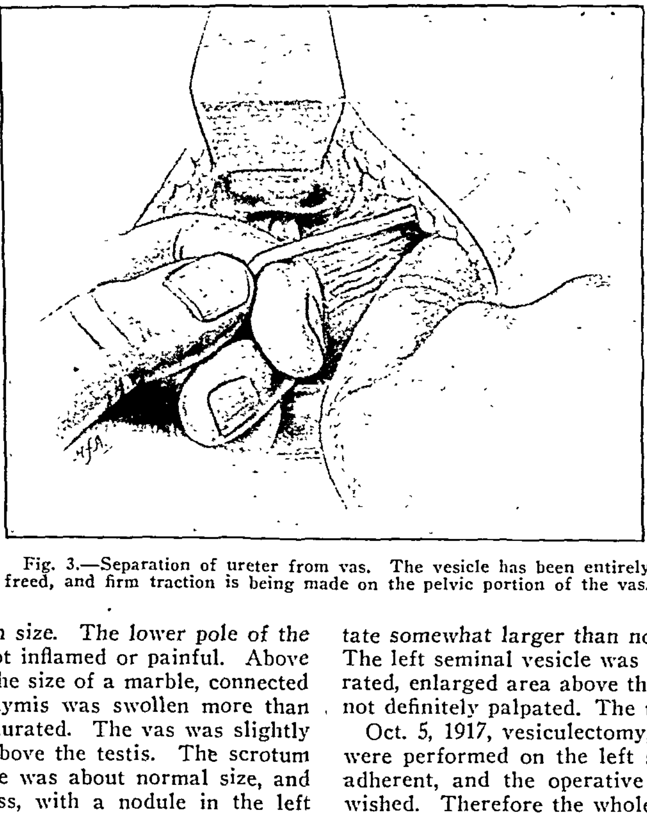

Fig. 3.—Separation of ureter from vas. The vesicle has been entirely freed, and firm traction is being made on the pelvic portion of the vas.

Physical Examination.—The lungs were negative. The right testis was about normal in size. The lower pole of the epididymis was enlarged, but not inflamed or painful. Above the testis was a discrete mass, the size of a marble, connected with the cord. The left epididymis was swollen more than the right and more diffusely indurated. The vas was slightly enlarged for a short distance above the testis. The scrotum was not involved. The prostate was about normal size, and of somewhat increased hardness, with a nodule in the left lobe. There was no pain on pressure. The seminal vesicles felt as nodular masses rising above the prostate, the left one being somewhat more marked than the right. The urine contained a few pus cells, as the microscope showed.

Aug. 27, 1917, double vesiculectomy, vasectomy and epididymectomy were performed. The left vesicle was more recently inflamed than the right, which was fibrous. No definite nodules were to be found in the prostate.

August 30, all drains were removed. The patient was free from pains and his general condition was good.

September 7, all wounds were healed.

September 12, he was discharged in good general condition. The scars were perfectly healed. The testes were slightly indurated, but were not at all painful. There was no ecchymosis. The urine still contained a little pus.

Pathologic Report.—The patient was suffering from tuberculosis of both epididymides and seminal vesicles. The vasa showed no change. A pig inoculated with the urine, Aug. 28, 1917, and killed Sept. 26, 1917, showed no sign of tuberculosis. The disease affected the left side for two years and nine months, and the right side for two years and seven months.

June 3, 1918, he was at work and in splendid health. He had gained from 15 to 18 pounds. Coitus was normal, but not as frequent as before. The testes were of normal size and freely movable in the scrotum. The cords were not thickened. By rectal palpation the prostate felt normal. At its upper limit, there was a definite shelf left by the removal of vesicles. The rectal mucosa was somewhat adherent. The urine was clear and acid, with a specific gravity of 1.014, and with no albumin and no sugar.

Case 6 (No. 6468).—Oct. 3, 1917, a barber, aged 33, married, complained of swelling and abscess on the left side of the scrotum.

History.—The family history was negative. The patient had been married twelve years and had eight children. He had had chancroid at 17 years of age and gonorrhea at 18. He had experienced no urinary troubles since. For the previous five months he had noticed that the urine had not been as clear as usual. He had observed swelling and pain in the left testicle about twelve weeks previous to consultation. There was no history of infection or trauma to account for the condition. The pain was of a dull aching character, relieved considerably by warm applications and a suspensory. A week later the patient felt perfectly well. The pain recurred in two weeks and the swelling, which persisted to date of consultation, finally led to an abscess which was later incised. He lost 10 pounds in two weeks.

Physical Examination.—The patient was a pale, poorly nourished Jew. The lungs appeared to be normal. The left scrotum was distinctly larger than the right, because of a large firm testicle and epididymis. The skin of the scrotum was adherent at the globus minor in the area of the previous incision. The cord seemed normal. The structures of the right scrotum were normal. Rectal examination showed a prostate somewhat larger than normal, but not tender or nodular. The left seminal vesicle was readily palpated as a hard, indurated, enlarged area above the prostate. The right vesicle was not definitely palpated. The urine contained considerable pus.

Oct. 5, 1917, vesiculectomy, vasectomy and epididymectomy were performed on the left side. The vesicle was markedly adherent, and the operative exposure not all that could be wished. Therefore the whole of the vesicle was not removed. As will be seen later, this was a definite error of surgical judgment.

Pathologic Report.—The patient had tuberculosis of the epididymis, vas and vesicle.

Subsequent History.—He made rather a slow convalescence. For several days he had an obstinate, moist, bronchial cough. The temperature was 102 F. on the sixth day. This ceased and the temperature became normal. The wounds healed slowly, especially that in the perineum which was still discharging a very little at his departure from the hospital, Nov. 2, 1917.

Dec. 4, 1917, it was found that though advised as to hygiene, diet, etc., the patient had been taking no care of himself at all. He had been working for the previous three days and had felt pretty well. The sinuses had not healed, however, and the day before the right testicle had become swollen and tender. There was a slight frequency of urination with slight terminal pain. There were no chills or cough. On examination, the right epididymis was slightly enlarged, but not nodular or fluctuant. Throughout the whole palpable course of the vas, there was extreme tenderness.

Dec. 14, 1917, he reentered the hospital as No. 7856. The process in the right scrotum had rapidly increased. The swelling was the size of a large lemon and the testicle and epididymis could not be differentiated. Rectal examination did not reveal any further involvement in the region of the prostate, but on the left side there was a boggy induration in the region where a portion of the vesicle was allowed to remain, and this was probably related to the persisting perineal sinus.

December 19, right orchidectomy was done. The testicle was found extensively involved by disease, and so removed, together with the epididymis and as much of the vas as could be secured by drawing it down from above.

December 23, a residual abscess appeared at the level of the internal inguinal ring on the right side. This was opened under cocain.

Jan. 24, 1918, the patient made a poor convalescence. He had hectic fever, especially at night, and did not react to forced feeding and antituberculous hygiene. The sinuses were treated with bismuth iodoform petrolatum paste.

Feb. 1, 1918, he was discharged though the sinuses still persisted.

June 5, 1918, he came to report that he was in a surprisingly good condition, having gained 10 pounds since leaving hospital. He spent the summer at the seashore and worked one day only each week. There was a minute sinus in the right groin and one in the right side of the perineum, but these discharged so little that no dressing was needed. The urine contained a little pus by microscopic examination. Coitus was normal but there was no ejaculated fluid.

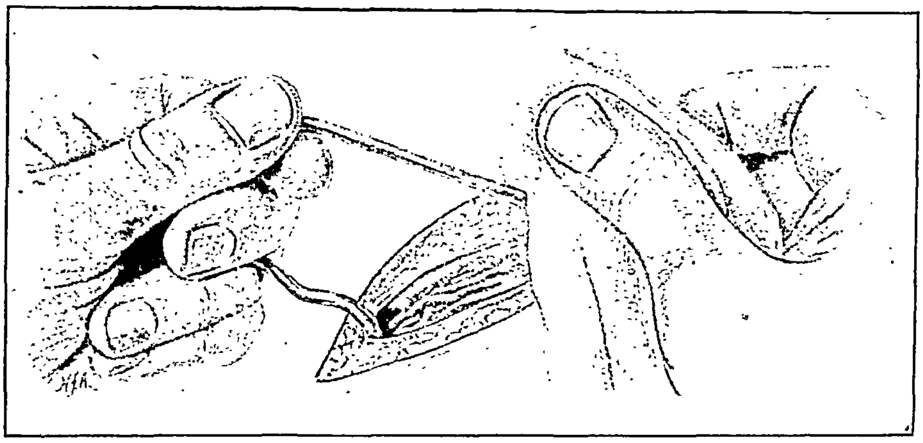

Fig. 4.—Inguinal incision. The spermatic cord from which the vas has been separated shows in the bottom of the wound. Traction is made on the vas, and at the same time the surrounding structures, together with the peritoneum, are wiped back by a gauze sponge.

Case 7 (No. 8326).—*History.*—March 7, 1918, a riveter, aged 26, married, complained of a swollen testicle. His mother had died of tuberculosis. He had been married three years and had one child 22 months old, who was well. He had had no cough or night sweats. He had lost 20 pounds in the previous two months. Six weeks before consultation, he had felt a dull pain in the scrotum. A week later he had experienced a swelling and tenderness in the left side of the scrotum, had felt poorly and could not work. He had stayed in bed and used poultices for the swelling which began to suppurate the previous week. Since his illness he had urinated once during the night. There were no other urinary symptoms.

Physical Examination.—Tactile and vocal fremitus increased at right apex posteriorly. There was dulness on percussion down to the midscapular region. There were no râles. There was an extensive involvement of the left epididymis by a low grade suppurative process, which was undoubtedly tuberculosis. The epididymis was enlarged at least five times its normal size, and at its upper pole, as well as at the lower, the disease had involved the skin, which at the upper pole had broken down and formed two sinuses. The contents of the right scrotum were normal. There was evidently no thickening of the cord on the left. By rectal palpation, there was a nodular thickening in the region of the left vas. The prostate felt normal, as also did the region of the right vas. The urine was normal.

March 8, 1918, vesiculectomy, vasectomy and epididymectomy were performed on the left side. The prostate was evidently not involved. A rather excessive adhesion of the vesicle to its surroundings caused moderate hemorrhage, easily controlled, however.

March 14, all drains were removed. The patient was comfortable, but for two days after operation, he complained of gas pains.

March 18, the perineal wound was well healed, and the one in the scrotum was granulating.

March 22, the fourteenth day, he was discharged in good condition. He had been out of bed for five days. There had been no fever since the operation. The slight discharge of seropurulent material from the area in the scrotum that remained was to be dressed for the patient in the outdoor department.

Pathologic Report.—The disease was tuberculosis of the epididymis, the vas deferens, and of the vesicle.

Subsequent History.—June 3, 1918, the sinus in the scrotum was healing slowly. The patient had gained 9 pounds and was stronger though he had not yet worked. The urine was normal.

Case 8 (No. 5987).—*Tuberculosis of the prostate; normal epididymides.—History.*—Dec. 30, 1916, an ex-policeman and ex-woodcarver, aged 67, a widower, complained of difficulty in passing water. The family history was negative. The patient's health had always been excellent. He had had gonorrhea forty years ago, though he denied syphilis. For the previous eight years he had been having gradually increasing difficulty in starting the stream, together with some increased frequency. There was no hematuria. Two weeks previous to consultation after an excessive amount of alcohol he had great increase in frequency, urgency and dysuria. Three days before he had had retention and at time of consultation he had not been able to empty the bladder for twenty-four hours.

Physical Examination.—No evidence of tuberculosis was to be found. The lungs were clear. Systolic blood pressure was 148 and diastolic 88. The bladder was distended to within 2 cm. of the umbilicus. The report of the rectal examination was missing.

December 30, suprapubic drainage of the bladder was accomplished under local anesthesia. About 1,200 c.c. of urine were withdrawn. Exploration of the prostate revealed marked hypertrophy of the median lobe.

Jan. 5, 1917, the general condition was much better. Suprapubic prostatectomy under ether was performed. Three lobes were removed, the left being markedly enlarged as was also the median, while the right lobe was about normal in size. The line of cleavage was easily found for the lateral lobes. The median lobe was less discrete and had to be removed with scissors in part. There was but little bleeding.

Pathologic Report.—The patient had tuberculosis of the prostate with glandular hyperplasia and chronic prostatitis.

Subsequent History.—Jan. 12, 1917, he was in good condition, being out of bed.

January 16, there was no longer any leakage of urine from the wound.

January 19, he was discharged in good condition.

Jan. 25, 1917, he reported that he rose three times each night to urinate. The urine was turbid. The catheter found 20 c.c. residual. He was to have bladder lavage with silver nitrate each week.

May 3, 1917, he was in good condition. There was no residual urine. There was a slight right hydrocele; otherwise the testes were normal. He was much disappointed that since the operation he had lost potency.

May 27, 1918, he reported that he had been entirely well in regard to the urinary system since the preceding year. He complained only of dizziness and constipation. The dizziness was evidently due to arteriosclerosis. The urine still contains a few pus shreds. The testes were symptomless, and except for the slight hydrocele noted in the foregoing, they were normal.

PATHOLOGIC FINDINGS

An extensive and searching pathologic investigation of the material obtained from this series of cases has been planned, but because of the unfortunate exigencies of the times, has not yet been completed. I regret that this is the case, and will ask your indulgence till opportunity offers when such results will form the basis of a subsequent communication. From a superficial histologic examination of the material, my impression is that the tuberculosis in the prostate or vesicle calls forth a tissue reaction of the chronic inflammatory type, characterized later by a considerable amount of connective tissue formation, in which caseation and liquefaction necrosis are but little marked. In the epididymis, however, the process is much more commonly a destructive one, leading to early necrosis and suppuration. We have here a notable analogy to the condition characteristically found in the tonsil on the one hand, and the cervical lymph node on the other.

Is the tuberculosis of the prostate and vesicle as seen in this material an older process than that of the epididymis? I am strongly of the opinion that it is, although I cannot definitely say so at present, for reasons previously mentioned. Certainly the findings thus far made are consistent with this assumption.

SUMMARY

Since it has been demonstrated that seven cases bearing tuberculous epididymides had a central area of infection with this disease at the time of operation, may it not be that many of our bad results, after the removal of the epididymis, are due solely to a misconception of the mode of invasion? Pathologic and clinical evidence of the past has not been able to afford a sure knowledge of this subject. The evidence which the cases under discussion offer is at least consistent with the hypothesis that when the male genitalia are affected with tuberculosis, this occurs first in the prostate or vesicle, to extend later to the epididymis. After removal of the entire seminal tract on one or both sides, the results are at least as good as those following epididymectomy alone. My belief is that the future will show that they are much better.

ABSTRACT OF DISCUSSION

DR. J. DELLINGER BARNEY, Boston: I was very much interested in Dr. Quinby's paper. We have now about two hundred cases which have been followed from a few months to several years since operation. It seems to me that the evidence is overwhelming, that the primary focus is not in the prostate or seminal vesicle, but in the epididymis. My reasons for this view are simple. Why is it that when the epididymis is removed on one, or particlarly both sides, the process in the seminal vesicle or the prostate will quiet down? This has taken place in all but two or three of our cases. In these cases there was a continuance of the process, with rupture of an abscess sometimes into the perineum—once, I believe, into the rectum. But in all other cases the prostate and the seminal vesicles which were markedly indurated and clearly tuberculous before operation, subsequently quieted down, resulting in a clinical cure. Also the tuberculous bladders have quieted down symptomatically and cystoscopically. It seems to me that this in itself is almost a sufficient answer.

I had occasion two or three years ago to go over the entire literature of the subject, and found that primary tuberculosis of the seminal vesicle or of the prostate was excessively rare, whereas secondary invasion from the epididymis, was almost constant. I have been informed by competent pathologists that it is sometimes impossible to tell the age of a tuberculosis process by either the gross or microscopic appearances.

I have great respect for the operations which Dr. Quinby has performed; but it is my belief that it is impossible to remove tuberculosis by such an operation, because by the time the diagnosis can be made, the process has spread outside of these organs and the lymphatics are involved. I do not believe that his, or any technic, will enable us to clear it all out.

DR. J. P. O'NEIL, Chicago: I think we are all agreed that these cases of tuberculosis are primarily surgical; but I do not believe that we should stop there; it is essential to eradicate the primary focus as much so as in the treatment of tuberculosis. I have used mostly Koch's old tuberculin in dilutions of 1 to 10, 1 to 100, and 1 to 1,000; and as high as 1 to 100,000. In all of these cases I started in with tuberculin immediately after the operation, or as soon afterward as possible.

If possible I make the injection about 4 o'clock in the afternoon. About twenty-four to twenty-eight hours after the injection a temperature reaction appears with a local reaction at the area primarily involved. I have found that we may have no temperature reaction until 48 hours afterward. I have often seen it go as long as 72 hours afterwards before a temperature reaction appeared. I think the temperature reaction did not go above 99.6 F. I believe that when we get above 99.6 F. we get above the opsonic index which we are really trying out there.

Many of these cases usually show no temperature reaction at all for six or seven days afterward. They will have merely the general reaction. You must be careful about increasing the doses. You should give about the same doses for two or three weeks at a time if the temperature reaction does not go above that. Provided you have no reaction you can increase the dosage one drop. I give tuberculin usually seven or eight days apart. My aim is to bring them, if I can, up to the point where I give them pure tuberculin eventually, that is, one drop of pure tuberculin without getting a reaction. It takes possibly two years or more to reach that point; but the effect that I have seen is in the abatement of the symptoms more than anything else. You must see that their living conditions are as good as possible. Pure tuberculin, if it is legitimately used, should be used in every case, because general tuberculosis or kidney tuberculosis is an adjunct following the treatment.

DR. JAMES A. GARDNER, Buffalo: I should like to ask Dr. Quinby about the number of sinuses that he has after this operation. It appeals to me as a very clever one, but in our hands we have found that an operation on the vesicles was much like an operation on the kidney; that we usually had tubercular tracts in spite of all we could do. Within the last few years, a municipal sanatorium at Perrysburg near Buffalo, was opened where there was administered the Rollier or sun treatment. I think the practitioners in Buffalo did not think very much of it until it had been established two or three years, and then a number of so-called hopeless cases, not only urinary cases, but bone tubercular cases—which they were glad to get rid of—were sent out there. They give a program at the Buffalo Academy of Medicine one evening during the winter at which they exhibit a number of these cases, and also show photographs and moving pictures. We were shown a number of cases which we felt were practically hopeless that had improved wonderfully. We have felt since that if we can remove some of the foci and send them there to be treated that they clear up reasonably well. I should be glad to hear what Dr. Quinby has to say about end results.

Dr. Oswald S. Lowsley, New York: When I was in Cincinnati recently, a gentleman whose name I do not just remember now, called my attention to an article he had written on the effect of ether anesthesia on early tuberculosis lesions. In this article he called attention to the fact that in certain pulmonary conditions where in operations it had been necessary to employ ether anesthesia the patient had derived some benefit when the disease was not too far advanced. He quoted a number of cases to bear this out; and on my return home I gave two or three patients ether anesthesia in connection with cystoscopy which was painful, in order to determine the truth of his assertions about kidney tuberculosis. They did show some improvement of their tuberculosis lesion; they both gained slightly in weight, and improved as regard their other symptoms. They were both early cases. What I did to them had absolutely nothing to do with their treatment, it was simply a matter of investigation.

Dr. W. C. Quinby, Boston: I am thankful to Dr. Barney for making the very frank remarks that he has, because my point in presenting this paper was to bring this subject to your attention; recognizing very well, indeed, that our treatment is not yet a final one. It was far from my intention to try to do unnecessary operating. That is not justifiable, and if we can definitely know that the removal of the epididymis is sufficient, I will be the first person to agree. But Dr. Barney is not consistent. He said that of about 200 cases of tuberculous epididymides, in all but two or three instances the disease in the prostate and vesicles has quieted down after the removal of the epididymis, and that there has been no recurrence. If the results of epididymectomy only, are as good as this, then there is no earthly point in these operations which I have been doing. But this recently mentioned very small number of recurrences is not what Dr. Barney has gone on record in print as finding from his statistics; neither is it shown by the statistics of any other men. Therefore I maintain that he is not consistent.

When one begins to draw deductions from embryologic sources on which to base the physiologic function of an organ of the body, one is treading on very insecure ground indeed. To consider the testicle an excretory organ because in its embryology it takes origin near the kidney, is no more logical than to consider the suprarenal an excretory organ simply because it takes origin in the embryo near the kidney in the general region of the wolffian body. This is no proof at all; it is a theory merely, fabricated to explain the clinical situation. To my mind it explains nothing whatsoever.

In regard to the pathologic question as to how one can tell the age of a tuberculous process, I quite agree with Dr. Barney that it is a very difficult thing to do, and for this reason I have been unwilling as yet to make any definite statement in regard to the material which I have secured by operation. I have the opinion of three or four pathologists whom we all recognize as being men of ability that it will probably be possible to tell the age of the tuberculosis when one has the whole tract for examination. It was planned to make an extensive serial section study of all this material, but this has not yet been done, because my technician has gone to the war.

Dr. Barney makes the point that it is impossible to remove all the tuberculosis. I quite agree with him. I do not pretend to remove all the tuberculosis. The outcome of surgical tuberculosis is improved by the removal of a certain amount of tuberculous tissue to give the patients' bodily forces and powers of resistance a sufficient opportunity to combat what remains. I feel in regard to these genital cases that they are in no sense different from those bearing a tuberculosis of the bowel or of the cervical glands. The problem is the same in all of them. If the surgeon states that by operation he is removing all the tuberculosis in the patient's body he merely illustrates his ignorance of the pathology of the disease. I do not feel that this operation which I have done removes all the tuberculosis. I do feel that, if the statistics which we have in hand showing that about half the cases suffer recurrence after a simple epididymectomy are correct, this makes it evident that there has not been sufficient tuberculosis removed to give the patient a chance to overcome the disease. Therefore more of the disease should be attacked than is done by the performance of a simple epididymectomy.

I agree with Dr. O'Neil's remarks concerning tuberculin. All of my patients have been put on a strict antituberculous hygiene and this includes regular visits to the hospital. They are also looked after by the social service department and they are given "old tuberculin."

In regard to Dr. Gardner's question about sinuses in the perineum following operation, this is an important point, and is the strongest argument which has previously been advanced against the perineal operation in tuberculosis. There was only one occasion in which the perineal sinus discharged for as long as three months, and in no case was there enough discharge to amount to anything.

I have not had any experience in regard to the subject discussed by Dr. Lowsley. Almost invariably all my operative work in urinary or genital cases is done under nitrous oxid anesthesia.

Dr. J. Dellinger Barney: Will Dr. Quinby please state the point that he is in doubt about?

Dr. Quinby: I quoted what you had published in an article written about two years ago. You said "It is characteristic of the disease to attack the opposite epididymis in over one half the cases, within a year or two of the time of the involvement of the first side. This catastrophe occurs in spite of all efforts to prevent it, but an early excision of the epididymis first attacked will improve the chances of its fellow;" and this statement is in direct accord with the statement made by Dr. Keyes, Jr., several years before. You now tell of cases to the number of 200 or more which you have personal knowledge of, and in only two or three of these did the genital tuberculosis of the vesicle or prostate fail to quiet down after the epididymis was removed. It is evident that these statements are not consistent.

Dr. Barney: I see your point of view. I think that the situation is this, and it will answer Dr. Quinby's question and straighten out the matter. Recurrence or relapse occurs on the opposite side in about 50 per cent. of the cases. This we have considered to be due to involvement of the prostate and vesicles from the first epididymis, but after removal of the first epididymis the process in the prostate and seminal vesicle quiets down in about 50 per cent. In the other 50 per cent. the process in the prostate or seminal vesicle does not subside before involvement of the second epididymis takes place. We have divided the second vas at the time of the removal of the first epididymis, or have taken out a section in the hope of preventing a recurrence on the second side, and have found the latter measure very successful. Where sterility can be shown to exist, as it does in most instances of this nature, no harm is done. It is also true in the cases where both epididymides have been taken out, with two or three exceptions, that the prostate and the vesicle which were previously tuberculous have quieted down to the extent that they are clinically cured. In other words, unilateral epididymovasectomy will retard a tuberculous process in the prostate and seminal vesicle and prevent relapse on the opposite side in about half the cases; in the other half the second epididymis becomes involved in spite of the removal of its fellow. After bilateral epididymovasectomy either at one or two sittings the prostate and seminal vesicle become clinically cured. Does this remove the apparent inconsistency of my remarks?

Health and Economic Loss.—I cannot estimate the economic losses that occur daily or yearly because of inefficient health and unsuccessfully treated disease. Great economists have tried but their estimates can never even approximate the real loss. There are other losses of greater importance than the economic losses. They are world losses in intellectual output; losses in public service; losses in ideal, commercial, professional, educational and religious progress; and, greatest of all, losses in human happiness—which follow this worldwide careless waste of human health and human life.—T. A. Storey, M.D., Ph.D., on Physical Training.

SOME NEW INSTRUMENTS IN OPERATIVE CYSTOSCOPY *

BRANSFORD LEWIS, M.D.
ST. LOUIS

PROSTATIC INCISOR

The pathologic reality and the various serious consequences of the condition known as contracture of the vesical neck are now well established. Endeavors to overcome the obstructive effects of this condition have been made by numerous authors, among whom are the following: Bottini, by the galvanocautery blade introduced through the whole urethra; Chetwood, by the same method applied through a perineal incision; Young, by punching out a section of the constricting neck. And Bugee has used high-frequency fulguration with the ordinary insulated wire.

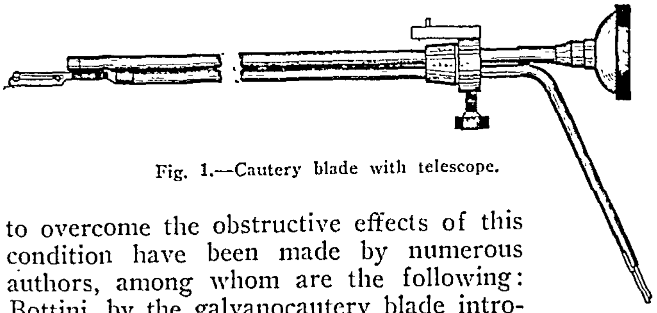

Fig. 1.—Cautery blade with telescope.

Two years ago or longer the desirability of opening the constricted channel without the perineal urethrotomy of Chetwood, or the strong tendency to hemorrhage induced by the punch operation of Young, was impressed on me. It was thought that some mode of applying fulguration more effectively than could be done by the wire was the desideratum. An iridoplatinum blade suggested itself.

With the assistance of the Wappler Electric Manufacturing Company and Mr. William A. Phillips, the instrument presented in Figure 1 has been evolved.

It consists of the blade mentioned, attached to a well-insulated wire, the center of a flexible shaft, capable of being attached by clips to either the direct or indirect telescope of my universal and operating cystoscope and utilized under direct observation of the operator.

The d'Arsonval (bipolar) current is used because of greater ease of control with respect to insulation, and the more effective cauterization it conveys.

A footswitch is used to turn on the current, when it is seen that the blade is properly applied against the constricting ring; and while the current is active the blade may be slowly drawn toward the operator, or back and forth, as desired.

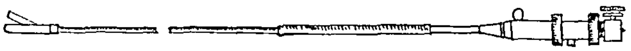

Fig. 2.—Ureteral knife.

Pain is avoided by the use of one or two tablets of cocain through the urethral tablet depositor. Bleeding seldom accompanies, but if it does occur in connection with an inflamed prostatic urethra, the blood may be swept out of view by opening the irrigating cock of the cystoscope sheath.

The after-effects are so little in evidence that the cases are ambulatory with the exception, perhaps, of a day or so of quietude to avoid infection. Internal antiseptics (helmitol) are advisable coincidently.

As an illustration of the efficiency and at the same time the innocuousness of this method, the following notes are given in brief:

Case 1.—D. R., a farmer of Oswego, Kan., aged 64, was referred to Dr. E. E. Liggett. Fifteen years before, the patient had been hurt while riding horseback and had suffered from prostatitis and retention of urine. Six years later, he had had retention. Aug. 26, 1916, after an auto ride on a cold day, he had suffered from retention and had been catheterized every eight hours for several days. August 31, he consulted surgeons of another city, where, on account of the seriousness of the situation, continuous drainage through a catheter suprapubically was established. He was then sent home to be advised later as to when prostatectomy should be carried out. Dissatisfied with this arrangement, he consulted me in October. His condition was then bad. He was unable to pass any urine save through a catheter or the suprapubic drainage tube, and infection of the suprapubic opening was making itself manifest. The urine was of low specific gravity, indicating that the kidneys were beginning to participate in the degenerative process. Indeed, he was in no condition for prostatectomy, even if it had been desirable.

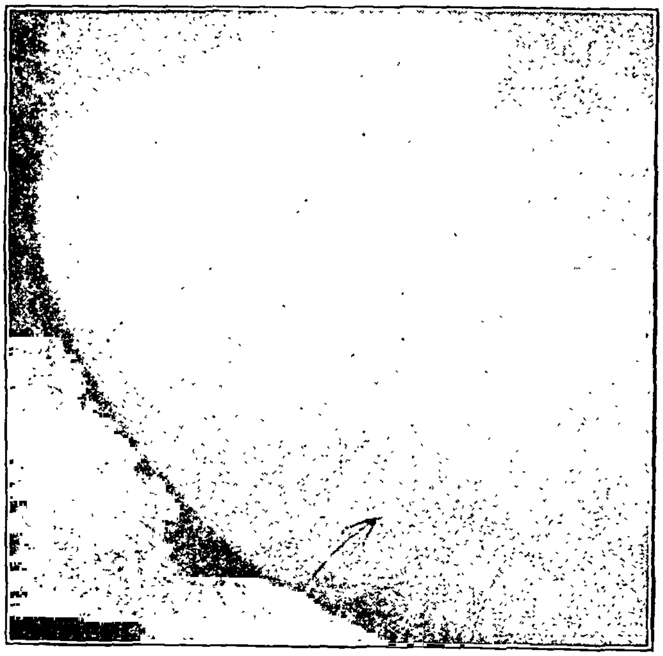

Fig. 3 (Case 2).—Shadow in contact with ureteral catheter, simulating ureteral stone (compare with Figure 4).

Fulguration with the prostatic incisor was first used October 17. The effects were striking. A few days after the first one, he was able to urinate voluntarily and to empty the bladder completely. The fulgurations were supplemented with deep urethral dilatings from time to time.

The patient has reported once or twice since, being in fine condition, with free urination and complete emptying of the bladder.

Several other instances of equally satisfactory results might be cited, but are omitted for lack of space.

URETERAL KNIFE

For a number of years, since about 1904, I have made use of ureteral scissors in connection with the operating cystoscope, for the purpose of opening a constricted ureter, or enlarging its orifice. In most such cases, they have given good service, but in some it was found that the lip of the orifice would slip

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* Read before the Section on Genito-Urinary Diseases at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

away from the closing blades of the scissors and an incomplete effect was the result.

The accompanying ureteral knife (Fig. 2), acting from behind forward, is intended to overcome this uncertainty. The blade is sunk and out of play while being introduced or until it is brought into play by turning the thumbscrew on the handle. The amount of divergence of the blade may be gaged and controlled by observing the number of turns of the screw and the direction of the blade as indicated by the little knob on the handle. It is obvious that the blade should be directed toward the superior lip of the orifice, so that the cutting will be toward the cavity of the bladder.

USE OF URETERAL FORCEPS FOR DIFFERENTIATION OF PHLEBOLITH FROM URETERAL STONE

Case 2.—Mrs. S., aged 42, was referred by Dr. Boynton of Sparta, Ill. She gave a history of intense suffering in the right renal region and also of intermittent colics on the left side, apparently low down in the ureter. A roentgenogram (Fig. 3) taken with a catheter in the ureter showed a shadow apparently in immediate contact with the catheter.

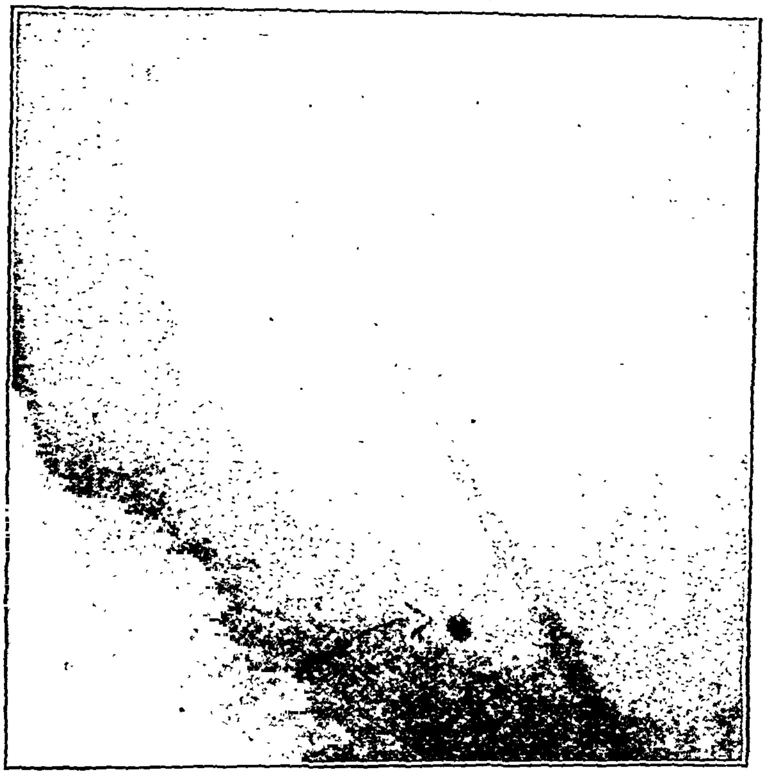

Fig. 4 (Case 2).—Ureteral forceps 3 inches up the ureter, removing the ureter from the shadow of a phlebolith previously in contact with a ureteral catheter (compare with Figure 3).

While the shape of the shadow did not conform to that typically characteristic of stone, it was not such as to make a definite denial of stone, and its *apparent apposition* to the catheter gave strong evidence presumptive of a stone, especially when taken in connection with the symptoms given. But this evidence was shown to be erroneous when ureteral forceps were introduced into the same ureter and another roentgenogram was taken (Fig. 4). The forceps, being more rigid than the catheter, straightened out the ureteral channel, *definitely separating* it from the shadow by a distance of half an inch. This action indicated that it could not be a stone within the ureter and therefore must be a phlebolith.

It is hoped that this sign may in certain cases prove as useful for differentiation as it proved in this one.

URETERAL DILATOR WITH PARALLEL DILATING BARS

The ureteral dilators previously submitted by me have had an objectionable feature in the fact that the most forcible dilatation was centered at some one point instead of being applied evenly along the ureter for a given distance (Figs. 5 and 6).

The latest model, herewith shown (Fig. 7), overcomes this objection and also gives a more forceful effect than the previous ones.

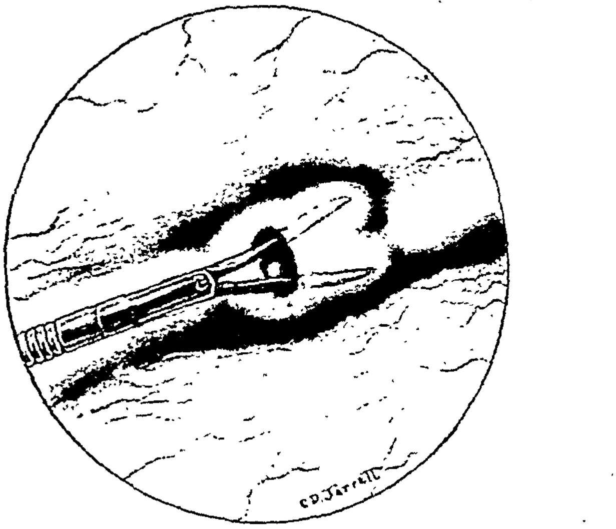

Fig. 5.—Ureteral dilator.

In addition to its use as a dilator, either at the meatus or above, it is conceivable that it might be used for traction on an incarcerated stone, as shown in Figure 8 *D*. I have not had an opportunity of using it in this way.

Since reading this paper, the author has removed an incarcerated stone by the method described above directly from the ureteral caliber, *fully 2 inches above the orifice.*

ABSTRACT OF DISCUSSION

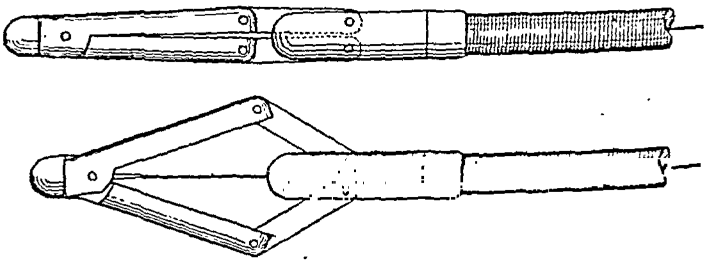

Fig. 6.—Ureteral dilator, closed and open.

Dr. William F. Braasch, Rochester, Minn: The instruments which Dr. Lewis demonstrated are a distinct improvement over his previous ones; the rectangular dilator is a great improvement over the *Kollmann dilator type.* The intraureteral knife ought to be much more practical than the scissors. Although the meatus may be cut with impunity, it is necessary to exercise great care in cutting the ureter itself. But in the upper portion of the ureter, above the distance of 2 c.c., I would be very loath to do much cutting. I have seen several ureters punctured by the introduction of stiff ureteral catheters. I was also much interested in Dr. Lewis' very ingenious method of distinguishing shadows in the para-ureteral area. I think it is a very valuable point, something well worth trying. The idea of using a stiff instrument which will not bend and will not permit the ureter to bend, or to straighten out the ureter drawing it away from the shadows, is a good point. I think it would be a good thing to follow in making a diagnosis of those troublesome shadows in the lower ureter. The unaided catheter is of comparatively little value in interpreting small shadows; it is as frequently misleading as it is of diagnostic value. I have long ago called attention to this point, and have advocated the use of the ureterogram. I can plainly see that even a stiff instrument or sound can also be misleading under certain conditions. I think that after all is said and done a final evidence as to the identity of these doubtful stones is the ureterogram. I have never yet seen a ureterogram fail if properly interpreted. I recognize the value of the method that Dr. Lewis has suggested in these particular cases.

DR. H. L. KRETSCHMER, Chicago: A contribution such as Dr. Lewis' is responsible, in part at least, for the fact that the entire treatment of stone in the ureter, for instance, has come back to the urologist, and that we have more cases referred to us for treatment for intravesical manipulation instead of having them operated on by the open method. Surely I believe that all of us, if we had a ureteral stone, would want to be operated on by the intravesical rather than by the open operation. Any improvement in the technic or in the instruments is always a step in the right direction. In reference to localizing shadows in the ureter, I think his method is very novel and very good; but it means that Dr. Lewis passed a shadowgraph catheter first, subjecting the patient to a second cystoscopic to accomplish his object. It required a second cystoscopy. Recently we have been doing that in another way. We make a double exposure with one plate. After the shadowgraph catheter has been passed an exposure is made. Then, without changing either the position of the patient or without changing the position of the plate, a second exposure is made on the same plate by changing the position of the tube. In cases of ureteral stone two shadowgraph catheters are seen and two ureteral calculi, both in exactly the same relationship to the catheter. In cases in which we suspect a stone, but the suspected stone shadow is produced by an extra ureteral shadow-producing body, we then obtain a double exposure, one of which shows a distinct interval between the suspicious shadow and the ureteral catheter. It seems to me in that way we can avoid two cystoscopic examinations.

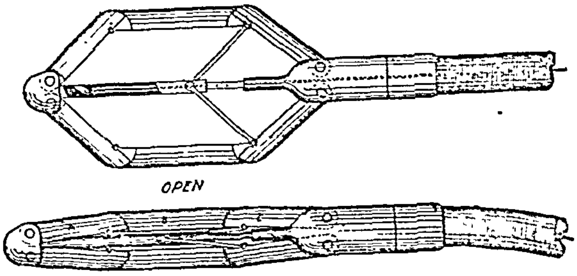

Fig. 7.—Latest model of ureteral dilator, with detail of parts.

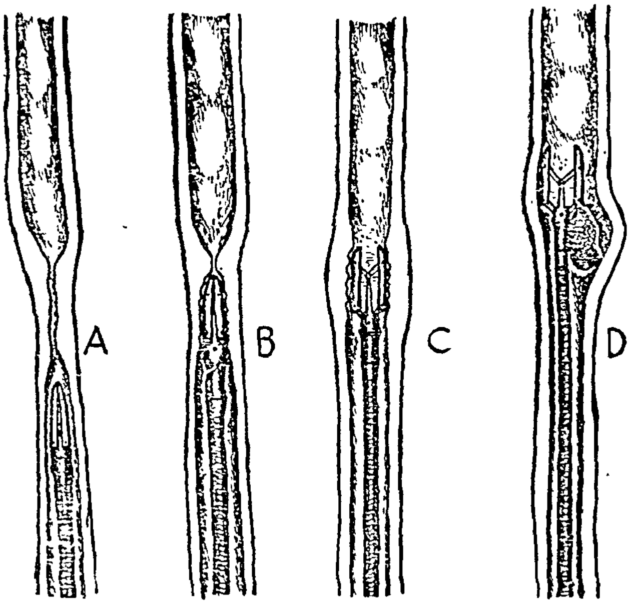

Fig. 8.—Use of dilator: *A*, in strictured ureter; *B*, entering stricture; *C*, dilating stricture; *D*, making traction on a stone in the ureter.

FAMILIAL MACULAR DEGENERATION WITH AND WITHOUT DEMENTIA

WITH A REPORT OF TWO NEW CASES OF THE TYPE WITH DEMENTIA *

HOWARD S. CLARK, B.S., M.D.
Assistant Professor of Ophthalmology and Otolaryngology, University of Minnesota Medical School
MINNEAPOLIS

Since 1897, when R. D. Batten[1] reported two cases in brothers, each of whom showed symmetrical affections in the two eyes consisting of dark spots in the macula and pallor of the optic nerve heads, a small number of cases in families have been reported.

These cases belong in the classification of familial degenerative diseases, among which those affecting the eye are the amaurotic family idiocy of Tay and Sachs; the juvenile type of amaurotic family idiocy of Spielmeyer,[2] Vogt, F. E. Batten[3] and others, and familial macular degeneration with and without dementia.

Between Tay-Sachs' disease on the one hand and macular degeneration without dementia on the other there are, of course, great differences; but analysis of many cases of familial disease seems to show a gradual transition from one to the other. In fact, when one attempts to put together syndromes and to give them definite names, one is at once confronted by numbers of atypical cases that might belong to one of any two groups.

For example, the juvenile type of amaurotic family idiocy seems to merge on the one hand into the infantile type, and on the other into familial macular degeneration with dementia.

Of the form known as familial macular degeneration, we may say that, combined with symmetrical degeneration of the macular region of the two eyes, there is in some cases a cerebral degeneration causing dementia.

Oatman[4] divides this form of degenerative disease into two types: the macular type in which the retina alone is affected, and the maculocerebral type in which both retina and brain are attacked. In this discussion, when the term "macular type" is used, it refers to the type without dementia. The term "maculocerebral type" is used to convey the idea of the disease combined with dementia. In the macular type we have simply an affection of the eyes and no cerebral symptoms whatever. This begins during the period of puberty, between the ages of 12 and 14 years, though Stargardt[5] reports one case beginning as early as the eighth year. This is in marked distinction to the maculocerebral type, the form with dementia, which begins between the fifth and seventh years, the period of second dentition.

The condition in the two eyes is symmetrical, and the objective and subjective symptoms develop very gradually, though we find exceptions to this rule in Lutz[6] and Sterling.[7] The first symptom is diminution of central vision of both eyes and central scotoma for red and green, which goes on gradually until, after some years, there may be complete loss of central vision. The periphery of the field of vision is unaffected and shows normal boundaries. Because of disease of the macular region while the periphery of the retina remains fairly normal, the patient develops, first, excentric fixation, and finally, nystagmus.

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* Read before the Section on Ophthalmology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

1. Batten, R. D.: Tr. Ophth. Soc. U. Kingdom, 1897, **17**, 48.
2. Spielmeyer: Neurol. Centralbl., **225**, 51.
3. Batten, F. E.: Quart. Jour. Med., 1913, **14**, 444.
4. Oatman, E. L.: Am. Jour. Med. Sc., 1911, **142**, 221.
5. Stargardt: Arch. f. Ophth., 1909, **71**, 534; Ztschr. f. Augenh., **30**, 95.
6. Lutz: Klin. Monatsbl. f. Augenh., 1911, **49**, 699.
7. Sterling: Neurol. Centralbl., **225**, 55.

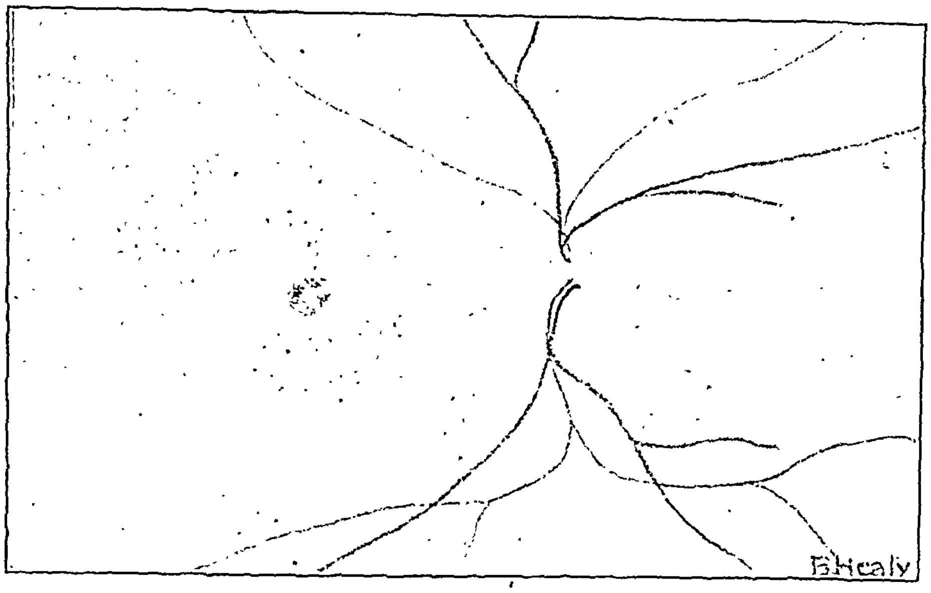

Fig. 1 (Case 1).—Right fundus, April, 1918. Left fundus practically the same. No optic nerve atrophy; vessels narrowed.

Ophthalmoscopically we find atrophy and degeneration of the retina almost always confined to the macular region, somewhat resembling the conditions produced by a senile macula. At first, the macular region shows delicate yellowish gray spots apparently not raised above the level of the surrounding fundus. These spots gradually coalesce and we have a dirty grayish yellow spot about the macula with a diameter equal to that of one or two disks. Covering the spot is a sprinkling of fine pigment granules. For a short distance around the grayish yellow spot the fundus may be dotted with a fine pigment, resembling black pepper. The retinal vessels are normal in the macular type. As to the general condition, we find in the macular type that there are no mental symptoms nor, in fact, any symptoms at all excepting failure of vision, excentric fixation and nystagmus. The general health is good in all reported cases.

This type is much more common than is the type combined with dementia. I was able to find reports of thirty-seven cases of the macular type and ten undoubted cases of the maculocerebral type. Of the latter, four additional cases have been reported which, however, we should class as atypical, because of some variations in history and symptoms.

The maculocerebral type, that is, the type which is characterized by the addition of cerebral symptoms, or dementia, to the eye symptoms already described, is distinguished from the macular type by the fact that the onset occurs at about the time of second dentition, instead of at puberty, and that cerebral changes begin at the same time as those in the macula. There is a gradual loss of intelligence leading to dementia. Ophthalmoscopically the changes are identical, except that optic nerve atrophy is more common in the type combined with dementia. The general health in practically all cases of both types reported has been remarkably good, and the patients have been well nourished, free from constitutional diseases and paralyses, and of good family history.

In addition to the cases that may be definitely designated as of the macular type and of maculocerebral type, we have some cases reported which, while conforming in many details to the accepted syndrome of the disease, present variations that prompt us to classify them as irregular cases. As examples, we have Stock's[8] three cases and Hirschberg's[9] one case.

REPORT OF TWO NEW CASES OF FAMILIAL MACULAR DEGENERATION WITH DEMENTIA

The patients in these cases are two of a family of five children. The other children of the family, one brother aged 7 years and two sisters aged 11 and 4, respectively, are in good health and are normal in every particular.

The two children who are affected present typical cases of the malculocerebral form, showing distinct cerebral symptoms as previously reported by F. E. Batten[10] and Oatman,[4] Nettleship,[11] and others.

The parents are persons of ordinary intelligence and in good health. There is no history of consanguinity, hereditary diseases, or mental diseases known in any branch of the family. There is no Jewish blood. The eyes of the parents are normal. There is no history of eye trouble in the grandparents or in the brothers or sisters of the parents or their descendants. The parents are farmers and give no history of venereal disease, and in both the Wassermann test was negative. In brief, there is absolutely nothing in the family history that has a bearing on this condition.

Case 1.—R. L., boy, aged 9 years, referred by Dr. C. L. Scofield, Benson, Minn., to Dr. J. P. Sedgwick, July 3, 1916, complained of poor vision and was of lowered intelligence.

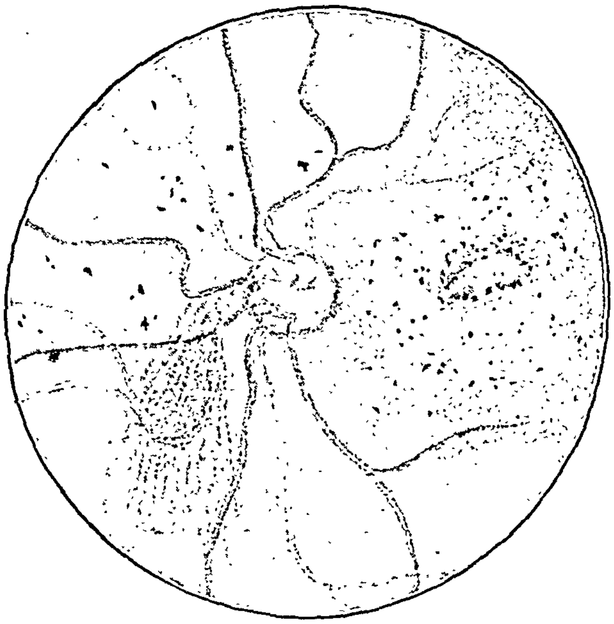

Fig. 2 (Case 2).—Left fundus, June, 1916. The retinal vessels two years later, have almost disappeared, reaching only slightly beyond the disk margin, and the optic nerve has become atrophic.

He was well nourished and strong, and showed no paralyses In earlier years he had been a normal child, as far as wa known, with apparently normal vision. He had played about a other children, had started school when about 6 years of age

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8. Stock: Klin. Monatsbl. f. Augenh., 46, 1, 225.
9. Hirschberg, J.: Centralbl. f. Augenh., January, 1904, p.12.
10. Batten, F. E.: Tr. Ophth. Soc. U. Kingdom, 1903, 23, 386.
11. Nettleship: Tr. Ophth. Soc. U. Kingdom, 1909, 29.

and had learned the alphabet. At this time he had no difficulty with vision and was said to be mentally as alert as other children. Previous diseases were mild measles and whooping cough. After he had passed the age of 7 years, his vision began to fail and the parents noticed that he looked sidewise in order to see.

At the same time he had suffered a gradual loss of mental alertness, which had made him unable to continue in school. These symptoms had become gradually more marked until at the age of 9, he was quite dull mentally and had no central vision. He could see large objects with the periphery of the retina by turning the head—eccentric fixation. Horizontal ocular nystagmus was present to a moderate extent. Examination of the visual fields was found impossible because of the patient's limited intelligence, poor vision and nystagmus. The Wassermann reaction was negative, as was also the roentgenogram of the skull. The urine and the blood were negative. Externally, the eyes were normal, and the cornea and aqueous were clear. The iris was of normal appearance with no evidence of previous inflammation. The pupils were dilated and reacted little, if at all, to light, but did react to accommodation.

The ophthalmoscope showed that mediums were clear and the optic nerve and retinal vessels normal. At the macula was a horizontally oval spot resembling those in some cases of senile macula, about 1 D. in long diameter, of a dirty dark gray yellowish color, and with very fine pigment spots. The spot at the macula was quite distinctly marked off from the adjacent area, but the retina had a grayish cast for about 1 D. surrounding it. The remainder of the fundus was apparently normal. The appearance of the two eyes seemed almost identical. There were no edema, exudates, coarse pigment deposits nor any results of previous inflammation seen in the fundi. In March, 1918, nearly two years later, all conditions were practically unchanged.

Case 2.—P. L., girl, aged 13 years, a sister of the patient in Case 1, had always had good general health, though she had complained of headache. There were no paralyses. She was very well nourished and the urine, blood and Wassermann reaction were negative. The roentgenogram of the skull was negative. The only previous disease had been measles. Vision had fallen so that she could not go about alone. She had been a bright child and at about 6 years of age, had begun school, where she had learned to read and to write her name. She was about 7 years old and in the second grade when her vision and mind had begun to fail. One year after discontinuing school she had begun to have what her parents called "fits." Mentally, the child was demented until her intelligence was about that of an imbecile. Because of the nystagmus and mental condition, visual fields could not be taken. The pupils were dilated and reacted little, if at all, to light. She had eccentric fixation and the staring appearance of one almost blind.

Externally, the eyes showed no disease. Ophthalmoscopic examination showed clear media and no evidence of previous inflammation. The fundi showed a condition similar to that of the brother's, but seemingly more advanced. The optic nerve was distinctly atrophic and the retinal vessels were small. At the maculae was the same dirty grayish yellow area as seen in the brother's eyes. This area was about 1 D. in its horizontal diameter. Around this macular area, for a width of about 1½ D., the retina had an atrophic appearance, was of slightly lighter color than the rest of the fundus, and looked as though it had been sprinkled with fine black pepper. The fundi of the two eyes were alike, except that one showed in the nasal inferior quadrant some flat, pale, grayish splotches of pigment which were almost transparent, and which were traversed by the retinal vessels without modification.

In March, 1918, the condition was the same, except that considerable pigment deposits appeared in other parts of the fundi than the maculae, and the retinal vessels atrophied so that they extended only a short distance beyond the disk.

The two cases reported in the foregoing are of the type of familial macular degeneration with dementia, eight cases of which were reviewed. The eight do not include Hirschberg's one case or Stock's three, which may be classed as atypical.

Oatman[4] reported the cases of two children in a family of three, which are remarkably like the two new cases that I have just reported. The eldest and the youngest were affected with macular degeneration with dementia, while the intermediate child, aged 10, was normal in all respects.

Summarizing the findings in the cases of macular degeneration with dementia which are so far reported, we are able to form a definite syndrome. It is true that some cases vary in details, but this is true in summarizing the symptoms of any disease. Of this type we find reported five families, consisting of thirty-two persons, ten of whom were affected. In all the cases the two eyes were symmetrically affected.

The age at which patients were examined varies from 8 to 13 years, except in Nettleship's patient, who was 48 years old at the time of examination. The age of onset in the maculocerebral type varies from 5 to 7 years, approximately the period of second dentition. At this time, we have failure of vision and intellect, sometimes accompanied by headache and convulsions, though convulsions may not set in until later in the course of the disease, and have not always been reported present.

As stated before, judging by our knowledge of this condition at the present time, I am inclined to regard macular degeneration with and macular degeneration without dementia as the same disease. Why the onset of one type occurs at the time of the second dentition and is accompanied by cerebral degeneration, while the onset of the purely macular type occurs at puberty, and is not accompanied by cerebral change, remains to be explained.

Of the other type of the disease, that is, macular degeneration without dementia, I find thirty-seven undoubted cases. Stargardt[5] has reported to date ten cases in three families, which is the largest number reported by any observer.

ETIOLOGY

No positive statement of the cause of this disease can be made in the present state of our knowledge. There are no deformities, nor ocular anomalies reported, nor any chronic general disorders with which the disease can be brought into relation.

Syphilis is strikingly absent. Only Mayou,[12] in his family of three cases out of the ten reported cases of the type with dementia, mentions it as a possibility, and he simply states that "doubtful syphilitic history was given by the mother." Batten in three cases and Nettleship in one case ignore this point. Oatman, in his family of two cases, and the family of two new cases that I have reported, give definitely a history of the absence of syphilis.

We thus have four cases of the type with dementia reported with definite absence of syphilis, three in which syphilis is not mentioned and three with doubtful syphilitic history in the mother. Since it is very probable that syphilis would have been mentioned by Batten and Nettleship had it been present in their cases, we may assume that they did not find it. Concerning the incidence of syphilis in the type without dementia, of the thirty-four cases reported twenty-two are definitely nonsyphilitic. In ten cases the point is not mentioned, and in two cases of R. D. Batten syphilis is mentioned in the parents, but the children showed no signs of hereditary syphilis.

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[12] Mayou, M. S.: Tr. Ophth. Soc. U. Kingdom, 1904, **24**, 142.

Thus out of forty-four reported cases in both types of the disease, twenty-six are reported definitely nonsyphilitic, the point is not mentioned in thirteen cases, and five cases give a doubtful syphilitic history. We should seem justified in excluding syphilis as an etiologic factor until such time as undoubted syphilis is demonstrated in a fair number of cases. At present the evidence is against it.

Against the theory that macular degeneration is congenital stands the fact that, in the type without dementia, vision remains good until the period from the tenth to the thirteenth year or about puberty, while in the type with dementia, the patient is normal until about the time of second dentition, at the age of 6 or 7 years.

In all analyzed cases, except Feingold's[13] three cases, the patients were Gentiles, in marked distinction to the Tay-Sachs type of amaurotic family idiocy, which attacks Jews almost exclusively.

Consanguinity cannot be totally excluded as an etiologic factor, as there was blood relationship in some reported cases, but those in which there was no blood relationship preponderate. As consanguinity has appeared, however, in four out of ten cases of the type with dementia, we must bear it in mind as a possible cause. In the cases of macular degeneration without dementia, it has appeared in only three out of thirty-four cases reported. Stargardt,[5] who in 1913 evidently had not seen the Jennings[14] report of 1909, describing three cases of the macular type in which the patients were children of first cousins, advances the theory that since consanguinity had not, to his knowledge, been reported in the macular type, it might possibly be a factor in determining whether the disease should assume the macular or maculocerebral type. His idea was that where there was consanguinity the form with dementia was more liable to appear than in those cases in which there was no blood relationship.

In the light of analysis of reported cases, I cannot at this time accept this theory, because I have reviewed cases enough of the type with dementia in which consanguinity is precluded to make the theory untenable. Besides, Jennings' three cases of the type without dementia in which there was consanguinity, make it even less probable that blood relation determines what form the disease shall assume.

Among forty-four cases of both types reported, seven cases give a definite history of consanguinity, twenty-two of no consanguinity, and in fourteen the point is not made clear. Thus, it may be seen that until we have an opportunity of analyzing many more carefully reported cases, the question of cansanguinity as an etiologic factor must remain unsettled. At present I may say that, while consanguinity may be a contributing factor, it is not a necessary element of the etiology.

Heredity must also be considered as a cause. Direct heredity, as in congenital cataract, etc., has not been observed. Rather this disease should be classed under collateral heredity, as defined by Bollinger, "when children of the same family suffer from the same disease, no cause for which can be found among parents or grandparents." No cases of the disease have been reported, except among brothers and sisters. We should bear heredity in mind as a possible etiologic factor, though the disease itself has not appeared in succeeding generations.

As to the nature of the disease, we are absolutely in the dark. Stargardt says, "The question of the nature of the inherited *Krankheitanlage* and of the direct cause of the disease process remains completely unsettled." He suggests that in the retinal disease, as also in the cerebral disease, which appears in the type with dementia, we have a certain autocytotoxin that has an affinity for the neuro-epithelium of the retina and, in some cases, for certain brain cells. He further suggests that when this purely hypothetic toxin attacks not only the retina, but also the brain cells, we have the type with dementia. Stock also assumes the presence of a toxin as a cause of his cases, which he reports under the name of *Familiäre amaurotische Demenz*.

Pusey[15] reports a family of five patients affected with the macular type, who showed arteriosclerosis of the terminal branches of the vessels in the macular region. He suggests that this arterial condition may have something to do with the macular disease.

Recorded cases reveal no previous illnesses that help us in regard to etiology. Only the common infectious diseases of childhood are mentioned.

The health and general condition of all patients of both types reported are strikingly good.

CHARACTERISTICS OF THE TWO TYPES

In the type with dementia the loss of vision and intelligence is gradual; no cases are reported in this type in which it has been rapid. The majority of cases have been examined from one to six years after onset, when mental and visual deterioration was well advanced. The vision of one of the patients whose case is reported in this paper was so poor six years after onset that she was practically blind. Two years after onset, her brother could see large objects fairly well. Of Mayou's patients, one examined four years after onset could count fingers. Mental deterioration seems to follow with about the same rapidity as that of vision. We may safely state that from three to six years is sufficient time in the maculocerebral type to change bright children with good vision to patients in a condition approaching amaurotic dementia.

In the type without dementia, in which the retina alone is involved, the loss of vision has been gradual, except in Lutz's[6] four cases and Stirling's[16] three cases, in which it was rapid at first. After the primary deterioration, the vision in this type may remain stationary for years and then fall again, but it does not go on to complete blindness.

In the two cases of the type without dementia in Batten's family, one child had "fits." One of the two patients whose cases I have reported (Patient 2) had convulsions, starting one year from the date of onset of the disease. One of Oatman's patients developed epileptiform seizures two years after the onset of the disease, which continued for a period of four years to the time of his last report, at which time they were less frequent. In the maculocerebral type of the disease, we find that convulsions are reported in four out of ten cases, and that they appeared from one to two years after the onset of the disease. Convulsions do not occur in the macular type of this disease, but only in the maculocerebral type.

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[13] Feingold, Marcus: Tr. Sect. Ophth. A. M. A., 1916, p. 312.
[14] Jennings: Am. Jour. Ophth., St. Louis, 1909, 24, 296.
[15] Pusey: Tr. Am. Ophth. Soc., 1915, 14, 364.
[16] Stirling, A. W.: Ophthalmoscope, London, 1912, 10, 141.

No paralyses are reported in either type of macular degeneration. The eyes externally appear normal. There are no signs of inflammation and the refractive media are clear. In both types the reported cases showed eccentric fixation. There were also nystagmus and searching movements of the eyes.

The visual acuity depends on the stage of the disease at which the examination is made. It varies from slight deterioration to almost complete blindness, though the latter condition is more common in the maculocerebral type, in which the vision passes through all stages between these two extremes in from three to six years. The periphery of the fields is not contracted, and there is, at first, a central scotoma for red and green, and later an absolute central scotoma.

The macular region has been described in detail. As to the optic nerve, four out of ten cases of the type with dementia are reported as showing optic nerve atrophy, while in two cases there was paleness of the nerve. In the two cases that I have reported, one of the patients showed distinct optic nerve atrophy, while in the other case, the nerves were normal. Optic nerve atrophy is more commonly seen in the maculocerebral type than in the macular type. Outside the macular region, the fundus has been normal in a majority of reported cases, but enough atypical cases have been reported to make mention of these variations necessary. Examples of the latter may be found in Stargardt's[5] family S., which were of the type without dementia. The cases herein presented show some irregular pigmentation in other parts of the fundi.

DIFFERENTIATION

In the differentiation of familial macular degeneration with or without dementia, we have to consider amaurotic family idiocy and retinitis pigmentosa.

There are two types of amaurotic family idiocy: first, the typical cases (Tay-Sachs form) in which the onset occurs in infancy and, second, the so-called atypical cases in which the onset is delayed until childhood and which may be termed juvenile amaurotic idiocy.

Any attempt to construct a definite syndrome and to separate sharply the juvenile type of amaurotic family idiocy from maculocerebral degeneration lands the investigator in a wilderness of atypical cases, which is most disconcerting. The more cases he analyzes, the more is he convinced that the two types merge into one another in the same manner that the infantile and juvenile types of amaurotic family idiocy seem to merge. For example, Spielmeyer's[2] cases of juvenile type resembled maculocerebral degeneration with dementia in the matter of age of onset, course, mental and visual symptoms, and absence of paralyses.

Vogt's cases showed yet another juvenile type of amaurotic family idiocy, in which paralyses were present with loss of vision, which condition seems to link them, on the other hand, to the infantile type. The onset of Vogt's cases covered a period of from six to fourteen years; loss of vision led to complete blindness, and the paralyses to complete helplessness.

In discussing the cases of the juvenile type described by Spielmeyer and also those of Vogt, Jendrassik[17] says, "From the description, it is apparent that the two types stand in close relation and can hardly be classed as separate diseases. They are only members of the great family of heredodegenerations." He explains the intensity and rapidity with which the infantile type develops as depending on a lack of resistance due to the extreme youth of the patients.

I may briefly state that in differentiating the types of degenerations to which any particular cases may belong, one must consider the syndrome presented and then place the cases as nearly as possible where they belong after a thorough analysis of reported cases, bearing in mind the large percentage of atypical cases.

PATHOLOGY AND TREATMENT

Unfortunately, little is known of the pathologic conditions of macular degeneration with dementia. Stock's[8] report, while of atypical cases, should be mentioned. He holds that the process of the primary disease, so far as the eye is concerned, is destruction of rods and cones, and finally, gradual destruction of the neuro-epithelium and of the outer nuclear layer.

The subject of the treatment of this disease may be dismissed with the statement that, to date, there is no known remedy for the condition.

CONCLUSIONS

We have a large class of cases showing a great variety of motor, sensory and mental symptoms, which may be called heredodegenerations.

Those in which we are particularly interested as affecting the eyes, are retinitis pigmentosa, infantile amaurotic family idiocy, juvenile amaurotic family idiocy, and maculocerebral degeneration.

While what have come to be known as typical cases of these conditions are easily distinguishable one from another, there are many atypical cases which are transitional forms and might be in one of any two classes.

The cause of these degenerations is unknown. If there is a common cause, we are totally in the dark as to why the disease assumes one form at one time and a different one at another.

Pathologically in amaurotic family idiocy, the ganglion cells of the retina and central nervous system are attacked. From our slight present knowledge, I think that the retinal condition in maculocerebral degeneration is due to degeneration of the neuro-epithelium.

The relationship, if any, among these different types of degenerative disease must be cleared by a study of atypical cases.[18]

ABSTRACT OF DISCUSSION

Dr. Park Lewis, Buffalo: Two points are suggested in Dr. Clark's analysis of cases which apply equally to familial idiocy. The first is the fact that they are familial conditions, which would suggest heredity. But obviously they cannot be inherited conditions, because the children become degenerates before they reach the period in which they can propagate their kind. Perhaps, according to the mendelian system, this is what would be termed a unit character, and therein lies the possible explanation of the family relationship. The second point is that both these conditions occurred at critical periods in the life of the child, the first at the period of second dentition and the second at the period of adolescence. This fact suggests a relationship with other organic changes that are occurring at that time. The pineal gland and the thymus cease to function at this time. The ovaries, the testes and the pituitary begin to activate. Dr. Timme brought to my attention a most important fact connected with the glands of internal secretion. He has shown that the conditions which are perpetuated are not necessarily the individual conditions which appear in the child, but are due to a disparity in the relationship of the endocrine glands. That would be quite in accordance with the mendelian law.

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[17] Jendrassik: Handbuch der Neurol., **2**, Spez. Neur., **1**, 420.

[18] In addition to the references already given, the following will prove of interest:
Batten, F. E., and Mayou, M. S.: Ophth. Rev., London, 1915, **34**, 91.
Doyne: Tr. Ophth. Soc. U. Kingdom, 1899, 71.
Darier, A.: Clin. ophth., January, 1914, **20**, 3.
Doyne: Tr. Ophth. Soc. U. Kingdom, 1909, p. 12.
Coriat: Arch. Pediat., **30**, 404.
Harbitz: Arch. f. Augenh., 1913, **73**, 140.
Wolfsohn, J. M.: Amaurotic Idiocy, Arch. Int. Med., August, 1915, p. 257.

These people do not inherit a distinct unit character, but, in all probability, a tendency toward an imbalance in the endocrine system. That would explain how apparently normal parents can have children showing these degenerative characteristics. And it is not unlikely that if the family tree were followed we would find not only atrophies and neural degeneracies, but other conditions of which this neural degeneracy is simply one manifestation. The crux of the whole problem lies in the fact that optic atrophy is a common condition and that it is not infrequently associated with low mentality.

Dr. Harold Gifford, Omaha: These cases are not interesting until you have seen one or two of them. I have seen two of the Vogt type, which begin to show signs of defective vision and mentality at the age of the first dentition. In the Stargardt-Batten type, to which Dr. Clark refers, the patients develop macular degeneration at puberty, but not cerebral degeneration. In my experience those cases are the most common. Dr. Clark is right in laying down the proposition that it is impossible to draw a dividing line between the groups, and that the chances are that they all represent a series in which there is something defective in the nervous system. Or you may explain it by the exhaustion theory of Edinger, or it may be attributed to a defective "anlage." We do not know the reason why it is, but the fact remains that the retinal cells and the cerebral cells tend to degenerate at an early age. This Stargardt-Batten type is the one we must look for. These children live to the age of puberty, are perfectly normal, and then their vision begins to fade, and if you examine their retinas at this time you will find a little dusky pigmentation in the center of the macula. It looks as if there was a little soot spread over it and partly wiped off. This pigment then accumulates in larger clumps and you see little areas of whitish degeneration mixed with it. It extends out, perhaps, two disk breadths in diameter and then stops. The periphery remains normal, and they retain good mentality. Recently I saw cases with everything typical in the family, except that instead of beginning at the age of puberty, I am quite certain that their trouble began along about seven or eight years of age. In other words, the action of the sexual cells has nothing to do with it, and the fact that the Vogt type, which usually begins at the beginning of the second dentition, is also coincident with the time when the children have to use their eyes and their minds actively, may indicate that this is a mere coincidence. The child may be slightly defective, and it passes entirely unnoticed until the child goes to school, when it is found out that there is something wrong. This particular type goes on to idiocy or dementia and epileptiform convulsions, paralyses, etc.

To show how these types run into one another: A family is reported by Higien, in which one child had the typical Tay-Sachs degeneration, beginning in infancy, the child dying in a few years. The second child had the Vogt type, beginning with the second dentition and going on in the usual way; and the third had the Stargardt-Batten type. Dr. Brown Pusey has suggested that this Stargardt-Batten type of macular degeneration is nothing more or less than a familial tendency to arteriosclerosis of the central portion of the retina. I think that theory is worthy of consideration.

Dr. E. J. Bernstein, Detroit: I have had only one case of the Tay-Sachs type of amaurotic family idiocy. Looking up the etiology, I find that many men lay stress on consanguinity as a cause. That is simply a confession of ignorance. I cannot understand, in the face of the great number of married people who are related and who have perfectly healthy progeny, why consanguinity should be assigned as a cause of disease in the small number of cases in which some stigmata develop.

Amaurotic family idiocy usually occurs among Jewish children; marriage between relatives is very common among Jews, but no one accuses the Jews of degeneracy, as a rule. Very few of these cases usually occur among the Russian Jews. It seems to me that this form of degeneracy is due to the economic conditions under which the parents have lived for so many years and not to consanguinity.

PERICHOLECYSTITIC ADHESIONS

THEIR IMPORTANCE AND CLINICAL RECOGNITION *

FRANK SMITHIES, M.D.
Associate Professor of Medicine, University of Illinois, College of Medicine; Gastro-Enterologist, Augustana Hospital
CHICAGO

Experimentally by Rosenow,[1] pathologically by MacCarty[2] and clinically by Fowler,[3] Cheney[4] and myself,[5] it has been satisfactorily demonstrated that affections of the gallbladder commonly represent progressing infection of the structures forming the gallbladder wall. The infecting bacteria are usually blood-borne. In a large degree, abnormal contents of the gallbladder are the by-products resulting from bacterially induced inflammation involving any or all of the four layers of tissue comprising the wall of the viscus.

In origin, pericholecystitic adhesions may be intrinsic, that is, occurring as a consequence of changes primary in the gallbladder, or extrinsic, that is, secondary involvement of the gallbladder, due to disease in neighboring structures.

The term "pericholecystitic adhesions" commonly signifies the complications resulting from inflammatory processes arising in the gallbladder wall and involving the serous layer. The extrinsic origin of gallbladder adhesions is comparatively infrequent. Such lesions include primary and secondary malignancy involving the gallbladder, contiguous invasion of gallbladder structure from disease in adjacent viscera (most commonly, ulcerative processes of the duodenum, stomach, bile ducts or colon), or inflammatory or malignant disease originating in the peritoneum.

The newer laboratory and clinical studies have clearly proved that since gallbladder disease is commonly initiated by bacterial growth, the manifestations of the inflammatory reaction on the part of the gallbladder wall may be continuous and progressive (acutely or chronically) or intermittent at variously separated intervals. Pathologically, two facts are consequently emphasized: First, very extensive pericholecystitic adhesions may arise within a short time, should there be actively progressive bacterial invasion, or similar lesions may represent years of disease, should the infecting organisms be of low virulence, the tissue defense strong or the extension of infection intermittent. Second, the clinical or histopathologic study of pericholecystitic adhesions furnishes no clue as to the time duration of the existing evidences of inflammatory tissue reaction. These facts are further commented on later.

MATERIAL STUDIED

The cases furnishing the basis of this report have been studied during the past eight years. On account of space, this paper must be limited to a consideration of pericholecystitic adhesions arising from disease intrinsic in the gallbladder. It may, however, be mentioned here that of 556 operatively demonstrated instances of benign gastric ulcer, gallbladder adhesions were noted in 41, or 7.3 per cent.; of 1,291 cases of duodenal ulcer similarly studied, pericholecystitic adhesions were present in 149, or 11.5 per cent., and of 947 cases of gastric cancer proved operatively or at necropsy, the gallbladder was invaded in 51, or 5.4 per cent. It is thus apparent that lesions extrinsic to the gallbladder may be complicated by pericholecystitic adhesions quite frequently enough to render such complication important from the standpoint of diagnosis, prognosis and therapy.

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* Read before the Section on Gastro-Enterology and Proctology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918

1. Rosenow, E. C.: Bacteriology of Cholecystitis and Its Production by Injection of Streptococci, The Journal A. M. A., Nov. 21, 1914, p. 1835.
2. MacCarty: Ann. Surg., May, 1910, p. 651.
3. Fowler, R. S.: Am. Jour. Med. Sc., 1917, **153**, 497.
4. Cheney, W. F.: Am. Jour. Med. Sc., 1917, **153**, 477.
5. Smithies, Frank: Surgical Clinics of Chicago, June, 1918, p. 505.

PERICHOLECYSTITIC ADHESIONS IN DISEASE ARISING PRIMARILY IN THE GALLBLADDER

A year ago I placed on record[5] the pathologic and clinical manifestations of 1,000 surgically demonstrated instances of gallbladder disease. This material has been restudied with respect to pericholecystic adhesions. The facts resulting from this study are now presented.

Frequency.—Including twenty-one cases of primary malignancy of the gallbladder, there were pericholecystitic adhesions in 489 (48.9 per cent.) of the 1,000 cases of intrinsic gallbladder disease. In sixty-five cases of the adherent gallbladders the viscus was universally adherent, buried in dense adhesions, or the structures involved by adhesions were not definitely determined. This group of cases has been excluded from the study and analysis made of the remaining 424 cases in which adhesions extended from the gallbladder to neighboring tissues.

Viscera Involved by Pericholecystitic Adhesions.—Table 1 demonstrates how extensive may be the scope of such adhesions and furnishes significant information respecting the degree to which pericholecystitic adhesions may modify the clinical pictures of disease either of the gallbladder itself or of abdominal viscera, particularly such as are concerned with digestion and assimilation. Attention is called to the facts that, in nearly one of three cases of gallbladder disease, adhesions involve the bile ducts (cystic duct 24.5 per cent., common duct 5.4 per cent. and hepatic duct 1.4 per cent.); that in nearly one of four cases, pericholecystitic adhesions reach the duodenum, causing some anomaly in contour, position or function, and that in more than one of ten cases the gallbladder adhesions are attached to the stomach, commonly at or near the pylorus. Adhesions to the omentum, the colon and the liver are frequent enough to merit serious consideration, if from no other standpoint than that of prognosis, when it is recalled that such adhesions are not rarely infected and represent bridges of inflamed serosa by which bacteria may be transplanted to viscera far removed from the initial bacterial focus. That such conception is not unimportant is emphasized by noting that in this series, pericholecystitic adhesions involved the pancreas eight times, the appendix or cecum three times, and a cystic ovary once.

TABLE 1.—PERICHOLECYSTITIC ADHESIONS; TOTAL GALLBLADDERS ADHERENT IN 1,000 CASES OF GALLBLADDER DISEASE (INCLUDING MALIGNANT—21)

	No. of Times		Percentage
To adjacent structures	489	or	48.9
Adhesions universal and not specified	65	or	6.5
Structures involved by adhesions in	424	or	42.4

FREQUENCY OF INVOLVEMENT OF ADJACENT STRUCTURES

Structure		No. of Times		Percentage
Cystic duct		104	or	24.5
Duodenum	96	97	or	22.8
Ampulla of Vater	1			
Stomach: pylorus	38	44	or	10.4
Stomach: other part of	6			
Omentum		43	or	10.1
Colon—Hepatic flexure	35	38	or	8.9
Transverse	3			
Liver		30	or	7.7
Common duct		23	or	5.4
Pancreas		8	or	1.9
Hepatic duct		6	or	1.4
Anterior abdominal wall		6	or	1.4
Appendix and cecum		3	or	0.7
Ovarian cyst		1	or	0.24

Frequency of Pericholecystitic Adhesions Simultaneously Involving Two or More Structures.—Table 2 indicates that in eighty-four cases, or 19.5 per cent., in which the gallbladder was adherent, multiple visceral attachments were present. It will be observed that the duodenum, the pylorus, the colon and the bile ducts were most frequently the locations of such multiple adhesions. The occurrence of eleven cases of duodenal or pyloric peptic ulcer (13.3 per cent.) in connection with multiple pericholecystitic adhesions gives significant hints relative to the clinical problems in such cases.

TABLE 2.—FREQUENCY OF PERICHOLECYSTITIC ADHESIONS SIMULTANEOUSLY INVOLVING VARIOUS STRUCTURES

Duodenum and cystic duct	13
Ulcer, duodenum or pyloric	11
Duodenum and colon	9
Duodenum and pylorus	9
Duodenum and liver	7
Duodenum and omentum	6
Duodenum, pylorus and cystic duct	6
Cystic duct and colon	5
Cystic and common ducts	4
Pylorus, duodenum, liver and colon	4
Omentum and colon	2
Duodenum, colon and liver	2
Liver and stomach	2
Cystic and hepatic ducts	2
Cystic duct and anterior abdominal wall	2
Multiple structures involved in	84
Or 19.5 per cent.	
Stone cases adherent	165 or 38.9 per cent.
Nonstone cases adherent	259 or 61.1 per cent.

Gallbladder Contents.—In the cases in which pericholecystitic adhesions were demonstrated, the viscus contained calculi in 165 instances (38.9 per cent.). In 259 cases, or 61.1 per cent., no calculi were present. It would thus seem apparent that gallbladders free from stones are adherent to neighboring structures nearly twice as frequently as are those in which stones are found. A biopathologic explanation of this fact is evidently possible. It is quite likely that when adhesions form rapidly and extensively, there exists active, progressive infection which causes exuberant inflammatory reaction in the serous coat of the gallbladder or the lymph channels, before great damage is done to the gallbladder mucosa with consequent marked alteration in the gallbladder content or interference with the free emptying of the viscus.

The foregoing facts also emphasize the fact that in the absence of the commonly considered clinical history of gallstones, one is not justified in assuming that the gallbladder is not seriously at fault. It is quite apparent that not only may the gallbladder function be seriously interfered with, but that the viscus may be the abdominal focus of infection from which bacteria may be widely disseminated. Moreover, the presence and extension of such pericholecystitic adhesions may interfere with the proper working of the digestive apparatus more than would the existence of calculi in the gallbladder.

Pathologic Effects of Pericholecystitic Adhesions.—There were eighteen instances of perforation of the gallbladder with extensive pericholecystitic infected adhesions, in seven of which stones lay imbedded.

There were five instances of acute perforation in which the gallbladder was surrounded by extensive, recent adhesions and pus. In one case, a pericholecystitic abscess appeared to originate from an adjacent, enlarged and infected lymph node. In seven cases, adhesions from the gallbladder to the duodenal or pyloric ulcer cemented the viscera together and was the site of protected perforation with resultant deformity and malposition of the parts. There were four instances of fistula between the gallbladder and the duodenum or stomach (duodenum three, and pylorus one). Two cases of fistula between the gallbladder and the hepatic portion of the colon were observed. A gallbladder appendix fistula was noted once. In another case, a stone had worked its way from an adherent gallbladder into the head of the pancreas.

Most commonly, the gross effects of pericholecystitic adhesions was to interfere with the free emptying of the viscus. This was particularly frequent in that great group of adhesions involving the cystic or the common duct (29.9 per cent.). In such cases, the gallbladder was often so tightly bound down that sharp angulation of the ducts resulted and enormous dilatation of the viscus followed. Not rarely the gallbladder contents measured more than a liter. The ducts themselves, proximal to the adhesions, were frequently dilated almost to the diameter of one's thumb. Such embarrassment to the free emptying of the gallbladder repeatedly accounted for the major clinical symptoms and signs pointing to gallbladder malfunction. Separation of such pericholecystitic adhesions not uncommonly permitted the free emptying of the gallbladder and the subsidence of signs of obstructed bile flow. In nine cases in which the bile ducts were involved by stenosing adhesions, enlargement of the liver of a cirrhosis-like type was recorded.

Pericholecystitic adhesions to the duodenum were sufficiently pronounced to cause malformation, some degree of stenosis, fixation, or faulty position in 43, or 44.3 per cent., of the ninety-seven instances in which such adhesions included that portion of the intestine. The adhesions were commonly attached to the second and third portions of the duodenum. In only nineteen cases was the first portion of the duodenum extensively involved. This fact is significant diagnostically when it is recalled that the first portion of the duodenum is the common location of peptic ulcer. Only once did pericholecystitic adhesion extend distally as far as the papilla of Vater. There were seven instances in which strong adhesive bands resulted in sharp constriction and angulation of the duodenum and in which, proximal to such constricting bands, the intestine was greatly dilated and exhibited intense vascular engorgement.

Malposition of the duodenum was sometimes extreme, the viscus often being drawn up beneath the liver and firmly fixed there. In ten cases of this type there was cicatricial stenosis of the intestine.

Pericholecystitic adhesions involving the pylorus or other parts of the stomach caused obstruction to free gastric emptying in twenty-three, or 54.5 per cent., of the forty-four cases in which such adhesions existed. In thirteen cases there was definite pyloric stenosis, seven of these being due to malignant adhesions. Deformity of pyloric contour was present in twenty-nine cases. Abnormal position of the pylorus, genernally partial or complete fixation to the right of the midline (even direct attachment to the liver), was observed in twelve cases where pericholecystitic adhesions involved the stomach.

Gross deformity of the colon was recorded in nine (26 per cent.) of the thirty-eight cases where adhesions reached the colon. Three of these cases were malignant. In the remaining six cases the colon was pulled up beneath the liver, tied to the gallbladder, the duodenum or the anterior abdominal wall. There were two instances in which strong nonmalignant adhesions between the gallbladder and the hepatic flexure of the colon caused sufficient obstruction to lead to the laparotomy at which gallbladder disease was demonstrated to be responsible for the colon stenosis.

CLINICAL MANIFESTATION OF PERICHOLECYSTITIC ADHESIONS

It should be stated here that in eighteen cases, or 4.2 per cent., there were no prelaparotomy symptoms or signs pointing to abnormality of the gallbladder or the digestive apparatus. The operative procedure was instituted for the relief of other disorders and at the abdominal exploration, the gallbladder pathology was demonstrated.

Of the remaining 406 cases, malignancy was present in twenty-one, and although such malignant disease was not always suspected to involve the gall tract, before laparotomy, neoplasms were considered probable in the clinical diagnosis. There thus remain 385 cases of pericholecystitic adhesions in which clinically the preoperative departures from normal were sufficiently pronounced to warrant exploration of the right upper abdominal quadrant. These clinical symptoms and signs can be considered only very briefly.

Symptoms.—It is quite impossible to differentiate dyspeptic disturbances due to gallbladder disease without pericholecystitic adhesions from such disease complicated by adhesions, unless there is clinical evidence of gross abnormality in function in adjacent viscera coexistent with the gallbladder upset. Such abnormal function is commonly of a mechanical type, as for example, when there is stenosis of ducts, the stomach, duodenum or colon, is in the nature of such acute right upper abdominal crisis as occurs in gallbladder or ulcer perforation with abscess. In cases with clinical courses of this form, in the absence of proof of the existence of primary disease in the stomach, duodenum or colon and in the presence of dyspepsia of the gallbladder type, one may suspect that symptoms and signs that experience has proved to be unusual in ordinary uncomplicated gallbladder ailments are produced by pericholecystic adhesions. Special examinations and laparotomy may eventually substantiate this suspicion.

1. Pain. Apart from the pain due to ulcer or malignancy involving the stomach or duodenum, when there exists coincident gallbladder disease, two main sources of pain due to the gallbladder disturbance are possible: first, pain due to the passage of calculi and that due to adhesions interfering with free emptying of the gallbladder. In both types of lesion "colics" may be severe. They were present in rather more than 60 per cent. of our stone cases and nearly 55 per cent. of the nonstone cases, in which pericholecystitic adhesions interfered with free emptying of the gallbladder and ducts. It is thus evident that there is little in the clinical history of pain that permits segregation of the gallstone cases from those in which gallbladders are the origin of adhesions to neighboring structures.

When colicky attacks of pain are not recorded, the manifestations of right upper quadrant may be exceedingly indefinite. A sensation of distention, fulness, up-pressure, or crowding may be annoying. The distress is commonly most pronounced soon after taking food or during the night. The former distress appears to arise as a consequence of an embarrassed gallbladder attempting to empty its contents when food begins to leave the stomach. The latter type of discomfort seems to result from the fact that the distended, inflamed gallbladder is irritated by gastric hunger contractions and a fecal or gas-filled hepatic colon crowding up into the gallbladder zone. At times a sensation of pulling, sticking or dragging leads to the suspicion that adhesions to adjacent viscera may be present.

2. Bowels. Constipation was obstinate in 62.7 per cent. of the instances of pericholecystitic adhesions in this series. There was diarrhea in 9.8 per cent. and normal motions in 27.4 per cent. These figures closely approximate those instances of gallbladder disease in which pericholecystitic adhesions did not exist.

3. Nausea was an annoying symptom in eighty-nine cases, or 18.2 per cent., and vomiting in 106 cases, or 21.7 per cent. With respect to these symptoms, there was no appreciable difference between the stone and the nonstone cases, but the frequency is considerably less than in instances of gallbladder disease in general (45.2 per cent.).

4. Signs of Obstructed Bile Flow. Jaundice was constant or intermittent in ninety-two, or 18.8 per cent., of the cases. There was a possible history of jaundice in forty other cases (10.2 per cent.). Except in the cancer cases, constant jaundice appeared to be rather more frequent in the stone cases than in those in which duct obstruction was caused by pericholecystitic adhesions. In the case of malignant gallbladder adhesions, jaundice was persistent in thirteen of the twenty-one cases. Clay colored stools were noted in sixty-one cases, or 12.4 per cent., and bile pigment in the urine in seventy-six cases, or 15.5 per cent.

5. Abdominal tenderness was recorded in 91 per cent. of cases. There was a palpable gallbladder tumor in twenty-nine instances and an enlarged palpable liver in eighteen cases.

6. Gastric Function. Complete test meal analyses are available in 370 cases. The emptying power of the stomach was interfered with in twenty-six cases, or 7.1 per cent. These gastric extracts exhibited persistent twelve hour food retention. In such cases, pericholecystitic adhesions involved the pylorus, the duodenum, the cystic and hepatic ducts, the omentum and the liver. There was gastric retention in seven of the twenty-one malignant gallbladders.

These facts respecting gastric emptying power are of considerable diagnostic significance when considered in relation to such information returned in disease of viscera in the right upper abdominal quadrant other than the gallbladder. In our series of gastric cancer, some degree of twelve hour food retention was proved in 71 per cent., in ulcer of the duodenum in 52 per cent. and in gastric ulcer in 39 per cent. It is evident that even though pericholecystitic adhesions to the duodenum or the stomach may be very extensive, the lumen of the viscera is but infrequently grossly occluded.

7. Gastric Acidity. The average free hydrochloric acid was 35.1, with a range of from 0 to 140. There were forty-five instances of achlorhydria, of which only seven were malignant cases. Total acidity averaged 43.2, with a range of from 4 to 146. Combined acidity averaged 4.7, with a range of from 0 to 19.

It is apparent from the foregoing observations that grossly the gastric secretion does not greatly vary from the normal in this type of case, although there is a rather high proportion of achlorhydrias. There are numerous instances of high free hydrochloric acid—quite as high as occurs in such lesions as duodenitis or ulcer of the duodenum or of the stomach. The test meal analysis may closely approximate that of peptic ulcer, with the exception that blood is uncommonly detected in gastric extracts.

ROENTGEN-RAY EVIDENCE

By roentgenograms, in which nonmalignant pericholecystitic adhesions involve the first part of the duodenum or the pylorus, it is not possible to differentiate the resultant deformity or malposition from anomalies due to chronic ulcer of duodenum or pylorus. In fact, as we have pointed out, peptic ulcer was concomitantly present in eleven of the fifty-seven cases (19.2 per cent.), in which the adhesions involved the pylorus and the common ulcer-bearing area of the duodenum. Thus in nearly one of five cases, a roentgen ulcer picture may modify the possible deformity from pericholecystitic adhesions. Roentgenograms may thus indicate displacement and fixation of the stomach to the right, deformity of the duodenal cap or pylorus, stenosis of the pylorus or duodenum, dilatation of the stomach or duodenum, and angulation of the antrum, the pyloroduodenal junction or of the duodenum itself. Alterations in gastric peristalsis, as a consequence of pericholecystitic adhesions even of a nondeforming or nonstenosing nature are by no means uncommon. The hyperperistalsis with rapid gastric or duodenal emptying or with obstinate pyloric, gastric or duodenal spasm may be quite as pronounced in the case of acute or subacute gallbladder affections with adhesions, as when duodenal or pyloric ulcer is present and associated with them. It may, however, be emphasized again that deformity of the stomach due to pericholecystitic adhesions is most common at the pylorus. Very infrequently the pericholecystitic adhesions reach the gastric antrum or parts of the viscus in which peptic ulcer is common. Similarly, the duodenum was involved by pericholecystitic adhesions in only nineteen out of ninety-seven cases, in its first portion, that is, the most frequent location of duodenal ulcer.

In 211 cases of gallbladder disease complicated by adhesions, of which roentgen study was made, the duodenum showed stenosis in ten, sharp permanent acute angulation of the intestine in seven, dilatation of the first two-thirds in twenty-six, possible deformity in forty-nine and possible malposition or fixation in twenty-three cases. In this group of patients there was gastric retention of the opaque meal in thirteen instances.

When the pylorus or stomach was involved, there was deformity or malposition in eighteen out of thirty-two cases, stenosis in twelve, with three malignant cases, and six hour opaque meal retention in ten cases. Deformity of the pylorus or duodenum was always most pronounced and persistent in the malignant cases or in those in which pericholecystitic adhesions complicated a greatly distended and enlarged gallbladder.

As in the case of roentgen examination of lesions other than pericholecystitic adhesions, it is important to make serial plates, with the patient in different positions, before and after the administration of such antispasmodic medicine as atropin or belladonna. This procedure will prevent local or general spasms of the stomach or duodenum from being considered as definite persistent deformities and will aid in establishing the fact that the deformity or malposition is constant or is localized.

If roentgenograms show enlarged gallbladder, definite gallbladder contour, or stone shadows, then, in the absence of clinical data indicating organic disease of the stomach or duodenum, gross anomalies of these viscera may with a fair degree of safety be interpreted as being due to pericholecystitic adhesions.

Pericholecystitic adhesions involving the colon are neither frequently nor readily demonstrated by roentgenograms. If the clinical history points to gallbladder disease, especially in association with evidences of colon stasis, and if roentgenograms show an enlarged gallbladder shadow or stones, then anomalies of position of the hepatic portion of the colon, if persistent in plate series after the administration of atropin or belladonna, may be interpreted as arising from pericholecystitic adhesions. Such anomalies are more pronounced in instances of malignancy of the gallbladder invading the colon.

Fluoroscopically, deformities of contour or malposition of viscera due to pericholecystitic adhesions are more accurately detected than by plate studies. Not rarely one may definitely prove the absence of primary lesion, such as ulcer or cancer, in the stomach, duodenum or colon, and by palpatory manipulation during the examination (particularly when the study is made in several seances) one may demonstrate that displacements, alterations in contour, angulations, spasms or stenoses are dependent on causes extrinsic to the viscera. Comparison between the observations made before and after the administration of antispasmodic drugs is of such great value that the procedure should be adopted as routine, if mistakes are to be avoided and accuracy in diagnosis sought.

ABSTRACT OF DISCUSSION

Dr. Robert T. Morris, New York: Dr. Smithies referred rather briefly to points which require rather more elaboration. Rosenow has shown that this group of adhesions bears relation to the elective affinity for structures in the vicinity for toxins. This class of adhesions may be grouped under what I have sometimes called "cobwebs in the attic." These cobwebs in the attic do not necessarily accompany an acute inflammatory process. Even a burn at a distance may give rise to adhesions in this vicinity, because toxins are being collected there by elective affinity. After a burn a toxalbumin may be produced, not, perhaps, different in its ultimate effect from the enzyme from an infected tooth root, from the enzyme from bacteria in the tonsil, from enzymes from the colon on their way out. All being grouped in this vicinity by elective affinity produce a second physiologic effect; they call out antibodies, and the antibodies are called out in such an amount that destructive cellular processes result; we then have desquamation of endothelium and plastic exudation, and this forms adhesions, even without the patient being aware of the process at all. There are acute symptoms in some of these cases, in other cases practically none. The symptoms may simulate very closely those of gallstones, and I have seen very many mistakes made by younger surgeons in making a diagnosis of gallstones. Do not make a diagnosis of gallstones; make a diagnosis of cholecystitis. How are we going to prevent recurrence of adhesions after we have separated them, or after we have removed a gallbladder? We must look for the original focus of infection and remove it. Shall we use mechanical means for preventing a recurrence? In cases where adhesions have been very extensive, I believe yes. My first choice is the Senn omental graft; my second choice is Cargile membrane; my third choice is to make an aristol film. The oils are *not* to be used in this vicinity, because oils catch leukocytes, which are thrown out for purposes of repair, and prevent their organizing and carrying new endothelium over the surface.

Dr. G. A. Friedman, New York: Recent work on the same subject as that of Dr. Smithies' paper and my experience have convinced me of the possibility of diagnosing pericholecystitic adhesions without waiting for exploratory laparotomy. The points are the tender spots or pressure points in the axillary, scapulary and posterior median lines to the right. Tender spots may not be detected in the region of the gallbladder. From the presence of these spots, cholecystitis was diagnosed by my house physicians without the aid of roentgen rays or other examinations. After carefully examining and comparing the spots at the right side with corresponding spots at the left side, and when repeated examinations have convinced you of marked tenderness in the axillary and scapulary lines, you may be sure that operation will reveal, if not gallstones, at any rate, cholecystitis or pericholecystitic adhesions. I do not claim this sign as my discovery. Boas pointed it out years ago, but it was never utilized in the proper way for diagnostic purposes, especially in atypical cases. I have frequently diagnosed cholecystitis in patients who never have had any pain. They presented only the nervous symptoms, such as sensitiveness in the stomach, as the sensation of a load or stone.

I have demonstrated that these pressure points are to the right in the scapulary line, just at the level of the gallbladder, and also near the posterior median lines. Usually the tender spots are found in the axillary line alone; very often, however, in both the axillary and scapulary lines, and occasionally in the axillary, scapulary and posterior median lines. I seldom find these spots in the region of the gallbladder. When repeated pressing on this region fails to disclose tenderness, it is falsely concluded that there is no cholecystitis.

Dr. Nathan Rosewater, Cleveland: May I ask Dr. Friedman how he distinguishes those pains from pains that would occur in rheumatic muscles, or, say, from some other cause?

Dr. Friedman: I have never found the aforesaid pressure points in muscular rheumatism or in the neuralgias, unless it is an intercostal neuralgia, and then the diagnosis is usually obvious. I had three cases of hepatic syphilis in which they were absent; in carcinoma of the pancreas with enlargement of the liver, and in secondary carcinoma they are absent; they are absent in all conditions except in cholecystitis.

Dr. Mary Dunning Ross, New York: I wish that some one would tell us a little more in detail how to get in back of these bacteria before the enzymes and the antibodies have done their damage.

Dr. William Van Valzah Hayes, New York: The cases that interest me particularly are those with adhesions or bands running from the gallbladder to the duodenum and the colon. These patients may have no symptoms whatever for a considerable period, and later on they develop attacks almost exactly simulating gallstones. There is sudden violent colicky pain and distress, and the patient is put to bed incapacitated. On operation no sign of ulcer, no sign of thickening of the gallbladder, no distinct evidence of any inflammatory condition existing at the time is found. Bands are found, and to secure for the patient complete and permanent relief these bands are divided transversely and sutured longitudinally.

Dr. Roland Hazen, Paris, Ill.: I have been doing work in repairing a ptosed colon, and found a great deal of trouble with adhesions connecting the colon with the stomach, duodenum, gallbladder and ducts. The work that I have been taking up has been based more on the anatomic arrangement of the normal fixed colon. I take the view of a colon as though looking at it from behind, and study what there is that prevents the colon, either normal or ptosed, from getting all the way down. In dissecting a 5-month-old fetus I found that the descending colon had already fused; it was firmly fixed; I could peel it away without difficulty. The ascending colon was very slightly fixed. These adhesions occur between the outer layer of the mesocolon or the ascending colon and the flank. In addition to that adhesion I found a little band of adhesion that ran from the hepatic flexure up to the gallbladder, not involving the entire gallbladder, but rather a thickening of the edges, and was evidently giving some support, pulling on the descending and ascending colon. There was some node on the surface of the liver, which is undoubtedly the beginning of the formation of the hepatocolic ligament. The only thing that held was this attachment to the end surface of the liver, which involved the bile vessels. Take that in the adult subjects; we have a case in which we have not had any fusion of the ascending colon, but the hepatocolic ligament is developed, and after adult age, with the enlargement of the pelvis, the colon will tend to sag if it is not fastened to the ascending colon; the strain will come on the ascending colon and all bands which go to the liver. Thus we are going to have congestion. Just what rôle the bacteria will play in that case which develops purely from a mechanical start on this basis, I do not know, but undoubtedly bacteria will have some part in that development; but primarily the trouble in these cases is not due to the infection; it is mechanical. On that basis I have examined the adhesions very carefully, and find that by drawing up the hepatic plate you will find that the adhesions radiate from the hepatic plate to the gallbladder, and in cases of cystolith of the gallbladder the adhesions radiate from the gallbladder out in a different direction, and those adhesions attach to something. In the final cases they attach to the gallbladder. If you look into these cases you will find that a great many are due to the colon trying to hold onto something to keep it from falling down. Sometimes the colon is held up by the adhesions, so that these persons have not developed the general symptoms of ptosis.

Dr. Frank Smithies, Chicago: The points which Dr. Morris brought out are referred to in the text. Dr. Friedman's observations correspond in a certain degree to the zones of peripheral tenderness or hyperesthesia spoken of by Head and others some years ago. Very likely the points are better made out in gallbladder disease, because we have to do with an infective process, which is frequently quite active. The question of pain indicating gallbladder disease I have emphasized in previous work. Less than a third of our cases of gallbladder disease gave the so-called classic symptoms of gallstones, or gallbladder malfunction.

Dr. Rose asks how we are to control the bacteria in the gallbladder wall. Most people come to the doctor after they are sick. The bacteria have already done damage then. If we pay more attention to the complications of the infectious diseases occurring in early life I feel that we can prevent some of the serious damage done later on in the gall tract.

Dr. Harris' explanation of the adhesions along embryologic lines is very interesting. I think adhesions follow these directions because the lymph stream and the blood stream follow natural bridges, and some of these ligaments are natural bridges.

As to the effect of ptosis in causing pain, I am not so pronouncedly in agreement with the doctor, because I have begun to forget about nine tenths of what I learned twenty years ago about ptosis. We see fewer so-called ptoses now than formerly, and we correct fewer ptoses than we did. I pay less attention to ptosis every day. If the bowel function is normal and the stomach function is normal, I do not care where the viscera are placed.

Operation and Low Blood Pressure.—An operation should not be done to a shocked man unless his blood pressure has been artificially raised above the critical level. Blood transfusion or intravenous injection of the gum-salt solution may be done at the start of an operation, and the pressure may thus be prevented from falling.—*Review of War Surgery and Medicine.*

RÔLE OF PASTEURIAN METHODS IN PROPHYLAXIS OF INFECTIOUS DISEASES IN THE ARMIES

ESPECIALLY IN THE ARMY OF THE ORIENT AT THE DARDANELLES AND IN MACEDONIA *

P. F. ARMAND-DELILLE, M.D.
Médecin des Hôpitaux de Paris; Médecin Major, French Army
PARIS, FRANCE

The past forty years have seen a complete modification of the methods of hygiene in public health under the influence of the progress of bacteriology. It is surely not paradoxical to say that the present war, with its great agglomerations of men, could not have been possible without the aid of a prophylaxis against infectious diseases.

The expedition to the Orient furnishes us with the most striking demonstration. I was appointed in 1915 as chief of the Service of Bacteriology and Epidemiology for the armies, with a well-equipped bacteriologic laboratory. All our army laboratories are indeed standardized with the help of the Institut Pasteur.

I shall not speak of the serotherapy against diphtheria, which has been employed not only curatively but also prophylactically in the control of epidemics. Nor shall I more than mention the serotherapy of tetanus, which has been systematically practiced among all the wounded since the first twenty-four hours of the war. The serotherapy of cerebrospinal meningitis and of dysentery has also rendered us great service, although the great variety of bacilli has made the latter much less efficacious in certain cases.

VACCINATION AGAINST TYPHOID

The vaccination against typhoid and against cholera has been, on the other hand, of much value. At the beginning of the campaign of 1914, it was only the forces of the regular army who were vaccinated against typhoid, so that numerous cases developed among the reserve. We are able, however, to stop this epidemic by the vaccination of the entire army, employing the antityphoid vaccine of Vincent.

We also encountered among the men of the army of the Orient a certain number of cases of paratyphoid A and B, both in Saloniki and at the Dardanelles. From March, 1916, we made use of the paratyphoid vaccine "T. A. B." of Widal, by which means we eradicated all typhoid and paratyphoid, to such an extent that during the latter half of 1916 the proportion was but one in ten thousand per month, and the cases observed always occurred in individuals, nonvaccinated for one reason or another.

Since May, 1917, we have employed the lipovaccine of Pinoy and Le Moignic, which has had the added advantage of requiring but a single dose. I have seen with much interest that studies of this vaccine have been made in this country by Whitmore, Fennel and Peterson of the United States Army.

PROPHYLAXIS IN CHOLERA, AMEBIC DYSENTERY AND PLAGUE

Vaccination against cholera has been practiced among all the soldiers and officers of the expeditionary forces to the Orient, and I had the opportunity of establishing its efficacy in an epidemic arising among the civil population in the town of Koritza on the Albanian frontier in August, 1916. The town comprised almost 10,000 inhabitants and the epidemic was rather severe, with a death rate of from seven to ten persons per day, during the three weeks before we arrived. I sent one of my assistants, Major Lemaire, with the technical councilor, Major Sarraillhè, who was able in the first twenty-four hours to isolate in seven samples the vibrio of cholera, entirely characteristic and verified by a high agglutinating experimental serum from the Institut Pasteur.

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* Read before the Section on Preventive Medicine and Public Health at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

With the aid of a local physician, these officers vaccinated the entire indigent population in the period of one week. This resulted in a complete arrest of the epidemic in less than three weeks. Three months later, a French division was billeted in this region without the development of a single case of cholera. The same results were obtained at Corfu by other French medical officers, who succeeded in stopping a similar epidemic that had been introduced by the Serbian soldiers.

At the Dardanelles and in Saloniki we observed a certain number of cases of amebic dysentery by the discovery in the stools of the adult amebas and cysts. These cases were treated by the injections of emetin with complete success.

In order to prevent contamination of fecal origin, we organized a system for the incineration of all refuse and, as much as possible, of fecal matter. When that was not possible, chlorination with lime was employed.

The prevention of plague was foreseen by the installation of a special laboratory in which my assistants performed necropsies on the bodies of all the rats secured each day by a group of men designated for that purpose. Fortunately, we found only a small number of rats infected with the *Bacillus pestis*. There was but one case of plague observed during the year 1916, and that in an indigent stevedore. The house was completely disinfected and the rats of the whole quarter were systematically destroyed.

With the object of coordinating all the services of prophylaxis in the Orient, there was established shortly after our arrival a high commission of preventive medicine and hygiene, which met each week and at which were represented the chief of the medical service of the French army, of the British army, of the Serbian, the Greek and the Italian armies, as well as the director of civilian public health of Macedonia.

PREVENTION OF TYPHUS

One of the most important points was the prevention of exanthematic typhus. The great Serbian epidemic did not reach Saloniki, but we observed a few cases in the Serbian army, as well as two cases among the civilian population of Monastir. Afterward an epidemic with thirty cases and fourteen deaths appeared in the Russian brigade.

Among the French troops there were observed only a few cases of relapsing fever. These few cases were contracted by the soldiers from the civil population. Relapsing fever, which is due to the spirochete of Obermeier, is, in fact, very frequent in Macedonia. During the first Balkan War in 1912, 50 per cent. of the Greek troops located in Macedonia were rendered useless by reason of this infection during the last months of the winter. Exanthematic typhus and relapsing fever are transmitted by lice, a fact now thoroughly established. By means of our systematic measures of disinfection, we were able almost completely to eradicate lice from the French troops. These measures consisted in the installation of shower baths for all the soldiers and the disinfection of their clothing. For the troops in the resting cantonments, the disinfection was accomplished by the so-called "groupes bains douches desinsectisation de Geneshe-Hercher brazier," which consist of 3-ton trucks carrying an apparatus for twelve shower baths and eight autoclaves for disinfection. This permits of passing the men serially and the delousing of one battalion in ten hours. For the troops confined to the trenches, when the nature of the country does not permit of the transportation of the larger apparatus, we employ a smaller one, the "appareil bain douches portatif de Charles Leblanc" of four baths, which weighs only 200 pounds and can be carried on a mule. For the destruction of the lice in the clothing, we employ simply ironing. This system, introduced by Dr. Sarraillhè, is very useful and efficient, if it is repeated at least once a week. The cycle of growth from the egg to the age of reproduction of the louse is twelve days. The destruction is produced by a type of tyndallization, that is to say, that the first ironing destroys a certain number of eggs and lice; and when the process is repeated each week, the progressive generations are also prevented from reaching maturity. We were able to demonstrate in a number of regiments that this method removed the lice effectively in 95 per cent. of the cases.

The epidemic which appeared in the Russian brigade was arrested by the creation of a sanitary barrier which was easily enough established in such a desert region with stations for disinfection and a second hospital for disinfection previous to discharge, furnished with the apparatus just described.

PROPHYLAXIS AGAINST MALARIA

The prophylaxis against malaria was unfortunately less successful, at least during the first year, because of the military conditions in the country, and on the other hand the difficulties in securing prophylactic medicines, quinin, for example, in sufficient quantities. In the winter of 1915 and 1916 I proposed an antimalaria campaign similar to that carried on by Major Craig at Panama. Macedonia, and particularly the valley of the Vardar, is perhaps comparable to the most dangerous tropical regions. At that time I was able to establish the fact that there were 20 per cent. of carriers in a village housing Greek refugees at Zeitenlick, 5 km. from Saloniki, in the neighborhood of the French and English camps. And the endemic index determined by the presence of splenomegaly, studied by Major Mauban, was nearly 50 per cent. among the children. For the 3,000 inhabitants of this village we had the opportunity of practicing quinin sterilization, and were able to diminish very markedly the contamination of the troops stationed in the camps. This was, unfortunately, not possible with the troops assigned to the trenches in the valley of the Vardar and the Butkova. For this group of men, preventive quininization was instituted, but was not efficiently carried out in certain regiments. In addition, the men were housed in tents with insufficient mosquito netting, so that the contamination was considerable. Further, it was impossible to have sufficient screening for the barracks, the clapboarding of which was poor. An insufficiency of crude oil did not allow of this treatment of the marshes, which were frequently 50 miles in extent, and those in Macedonia were interspersed with numerous marshy-bordered lakes. From July to October, 1916, we encountered a serious epidemic among the French as well as the English troops, with a certain number of cases of the pernicious type. It is necessary to add that our microscopic examinations of the blood demonstrated to us in September and October that the proportion of malignant tertian malaria was 95 per cent.

In 1917, the conditions were such as to allow of a reduction in the number of cases of malaria, thanks to a special service of prophylactic measures against malaria organized with the aid of M. Justin Godard, undersecretary of the Service de Santé. The plan was prepared by Dr. Edmond Sergent, chief of the Pasteur Institute of Algiers; Dr. Etienne Sergent, chief of the Antimalarial Service for Algeria, and Dr. Segroux of the Pasteur Institute of Paris. Following a mission for the study of conditions made by Dr. Sergent and myself in Macedonia, the service was organized with the following personnel: twenty physicians who had specialized in questions of tropical medicine, a woman physician who could talk to the indigent population, 300 nurses to supervise the quininization, all for the mechanical protection of the cantonments, and an engineer with a force of peons for the drainage of the district. The physicians were distributed in their respective districts and were consulted on the location of the camps, which were more easily chosen during the second year of the occupation.

Furthermore, the screening of all the base barracks was accomplished during the winter. All the soldiers were furnished with large individual mosquito nets and their use was enforced by the physicians and nurses under pain of severe punishment. Finally the drainage of all the small marshes neighboring to the camps was carried out. The quininization of the soldiers and of the civil population of the villages in proximity to the camp consisted of 0.4 gm. per day, effectively supervised. I am forced to add, however, as a result of my experience among a certain number of persons, that the preventive quininization even at this dosage is not sufficient to protect against tertian malaria, if the number of infections is considerable. This was the case in Macedonia, where the *anopheles* is extremely numerous. Thanks to these measures, it was possible to reduce to 75 per cent. the number of cases during 1917, and the pernicious cases occurred but rarely.

CONCLUSION

I may say that the complete eradication of malaria in Macedonia, impossible during the war, would require several corps of excellent engineers, a hundred million dollars and twenty years of labor. We hope it may be accomplished in the future, but at the present time for the protection of our troops we can only employ the mechanical measures against the anopheles, quininization and the drainage of the smaller marshes.

THE PRESENT STATUS OF THE OPERATIVE TREATMENT OF CHRONIC FRONTAL SINUSITIS *

T. W. MOORE, M.D.
HUNTINGTON, W. VA.

Today, obliteration of the frontal sinus is attempted only in those cases in which there has been extensive necrosis of the bony wall, and our treatment is directed to establishing ventilation and drainage.

Various operators have devised new methods and modified old ones of opening the frontal sinus intranasally since Schaeffer, in 1890, published his method of penetrating the floor of the sinus through the ethmoid cells. This method had been abandoned until it was revised and improved in 1905 by E. Fletcher Ingals, who later used gold tubes. In the same year it was improved by Segura, we are told by Watson Williams and also by Ingals in their interesting historical reviews of the subject. In 1906 Max Halle described his operation of removing part of the nasal crest with burrs. He has since modified his method by making a flap of mucoperiosteum, which has not proved advantageous in the hands of other operators. Vacher, Goode, Sullivan, Thompson and other rhinologists have added new methods and different technic.

Sluder, by his ethmoid knife operation, aided us. Later Mosher gave us much assistance, as the result of his painstaking anatomic studies, by simplifying the entrance to the sinus intranasally by the method which bears his name, through the agger nasi cell, and according to his later recommendation, through the upper part of the anterior end of the middle turbinate. This has again been made easier, I think, by the curet devised and used by Faulkner.

Then, Watson Williams advised opening the anterior ethmoid cells by cutting through the anterior end of the middle turbinate at its attachment to the outer nasal wall with biting forceps. In discussing Williams' paper, Tilly stated that he removed the anterior end of the middle turbinate. This, as all operators know, must be done when the space between the septum and nasal wall is very narrow. Cases of this type have always been the most difficult for us to handle. Williams also advised breaking down the ethmoid cells posterior to the ostium, as was recommended in greater detail of instrumentation and technic by Freer in 1915. As far back as 1911, Killian stated that he no longer performed the operation bearing his name. Beck's osteoplastic flap operation gives us an opportunity to work from the sinus downward into the nose, while observing each step taken. The fear of the terrible deformity that would result if the bony flap failed to unite has made this too formidable a procedure to me.

When there is extensive destruction of the bony walls, especially the external wall, it is not practical to adhere to any special type of operation. I remember some years ago operating on a beautiful woman of about 40, a time when women are much interested in their personal appearance. When the incision was made, I found a large sequestrum of bone covering the entire sinus, and including much of the superorbital ridge. In fact, nature had made a Beck bony flap. When this was removed, there was a step about half an inch deep in the median line. I was much puzzled as to what to do, but chiseled off the anterior wall of the other frontal sinus, obliterating both. Fortunately for me, the patient was pleased with her appearance afterward.

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LOTHROP'S OPERATION

The most distinct advance made, I think, in the surgery of the frontal sinus, is the operation devised and advocated by Lothrop. This offers all the advantages of the intranasal operations, and at the same time permits direct inspection of the sinuses and also of the work, step by step, as it is accomplished. It will be remembered that Lothrop recommends first the removal of the anterior end of the middle turbinate and the breaking down of the anterior ethmoid cells with a curet, which frequently gives a free opening into the frontal sinus. This procedure he follows ten days or two weeks before the more radical operation is done. This drainage, as we know, in a large percentage of cases will effect a cure.

His more radical operation is done as follows: A pledget of cotton saturated with a 4 per cent. cocain in epinephrin solution, is inserted in each nostril as far forward and as high as it can be placed. This lessens the bleeding during the operation. Under general anesthesia a curved incision, about 1 inch in length, is made through the eyebrow, beginning at the superorbital notch and extending over to the nose, the periosteum is carefully elevated, and a Vail or Jansen retractor inserted. An opening is now chiseled through the bone into one sinus at the naso-orbital angle, or Ewing's point. The sinus is now carefully inspected and any pus, polypi or granulation tissue removed, care being taken to preserve as much of the mucous membrane intact as is possible. A probe is now passed into the nasofrontal duct and used as a guide, while with curet, rasps and burrs, the cells anterior to the nasofrontal duct are broken down, and the mass of dense bone at the root of the nose, formed by the nasal process of the superior maxillary, frontal and nasal bones, is removed.

The partition between the sinuses is broken through and removed and the intranasal floor of the second sinus removed, whether it is diseased or not. At the same time the operator takes away the upper portion of the nasal septum, thus making a large passage from the now single sinus into the nose, which may be entered readily from either nostril. The external wound is now closed, without packing, and a pressure bandage applied and left on for twenty-four hours. when a dressing of cotton and collodion is applied and permitted to remain for five or six days, when the stitches are removed.

There is no after-treatment required, except a nasal (*not intrasinus*) douche to remove the increased secretion, due to the irritation produced by the operation. This usually subsides in two or three days.

MINOR ADVANTAGES OF OPERATION

There is no question in my mind but that frontal sinuses which have free drainage and ventilation do much better without being probed or treated in any way, which is usually distressing to the patient. Freer lays stress on this.

The burrs and rasps that have been devised by various operators, Lothrop, Tilly and Lynch, have added to my armamentarium.

We must never overlook the roentgen-ray picture in these cases, preferably stereoscopic pictures. While I have not acquired the proficiency of Beck in interpreting these plates and in being able to say so exactly by them what the pathology is, still they are invaluable to me.

Dr. Fletcher Ingals in a paper last year quotes some one as saying, "The value of an operation is not what it accomplishes in the hands of its inventor, but what can be done with it in the hands of other operators." Hence, my advocacy of this operation, which has proved very satisfactory to me, and to my twelve patients on whom I have used it, six of whom had been operated on by myself or some other rhinologist previously, without being permanently relieved.

An objection has been offered to opening a healthy sinus for increased drainage, for fear that it might be infected. My answer is that it does not, or did not become infected in any of my twelve cases, in only three of which both sinuses were involved.

I examined one of my first patients recently, now more than two years since the operation was performed, and there is still a free opening and the roentgen-ray picture shows a healthy sinus, although the patient had to have an operation on a maxillary antrum.

The variations in the anatomy as shown in Shambaugh's recent paper should make us hesitate to attempt to open all sinuses intranasally without seeing just what we are doing. In one of his specimens, one sinus had no outlet except into the other frontal sinus.

ABSTRACT OF DISCUSSION

Dr. Frank R. Spencer, Boulder, Colo.: We have all been forced to realize how rapidly an opening into the frontal sinus tends to close, even when we have been successful in enlarging the nasofrontal duct, and this closure soon defeats free ventilation and drainage. For this reason all intranasal surgery, on this sinus, is more or less unsatisfactory. The Killian radical operation has become very unpopular except in rare cases, on account of the disfigurement. This shortcoming has been met by the Lothrop operation. However, I should like to emphasize the importance of making the opening into the frontal sinus no larger than is necessary for efficient work, so as to avoid disfigurement, and the importance of making the opening into the nose, from the sinus, as large as the nasal anatomy, in any given case, will permit. Since the former is a temporary opening and the latter a permanent one the reason for this is self evident.

Another feature, which Dr. Moore mentioned briefly, is the importance of removing thoroughly projecting bone in the region of the frontal process of the superior maxillary. This can best be done with the burr. If left undone it gives rise to granulations which tend to close even the large double opening.

Dr. George E. Shambaugh, Chicago: I am in accord with the conclusions of the essayist regarding the question of an external operation. I am coming more and more to the conclusion that satisfactory relief for most of the frontal sinus cases can be reached by intranasal work. It is very seldom that we are required to do any operation for an acute sinus, but where there is recurring acute sinus infection the first step is the removal of the anterior and of the middle turbinate. In chronic cases this should be followed by an exenteration of the anterior ethmoid cells. With this accomplished one usually has little difficulty in making a satisfactory widening of the nasofrontal duct. The use of rasps are of great assistance in this work. In most of the cases of chronic sinus empyema we can relieve a patient of the larger part of his discomfort, even in cases in which the complete cure of the chronic process does not result from the nasal operation. In my opinion the external operation should be reserved for cases in which carefully carried out intranasal work fails to relieve the patient from annoying headache and in cases in which there is a threatened intracranial complication. Such cases will arise only exceptionally in one's experience.

Dr. James J. Pattee, Pueblo, Colo.: Frontal sinusitis, requiring operation, is a troublesome affection, and the operation of choice should be determined with care. From a general survey of the published opinions there is, in my judgment, a progressive increase in the number of intranasal operations with a corresponding lessening of the external. I am in accord with this order of things. I agree with Dr. Shambaugh that it is applicable in the vast majority of cases. In rare cases we must resort to external measures.

The Killian operation fails occasionally, even in the hands of our best operators. It frequently produces much disfigurement and in some cases fails to afford ample permanent drainage, the feature on which its greatest claims are based. Dr. Ingals' statement is very true. The intranasal operation requires intimate anatomic knowledge and much experience. The narrowest part of the nose is on a plane with the canthi. The Lothrop operation has the advantage of opening the sinus very near this point, a great advantage. The Lothrop operation permits of thorough work; establishes adequate drainage; affords the best vision, and offers the most direct route to the site of greatest difficulty and danger. It permits healing in the shortest time and minimizes untoward after-effects.

Military Medicine and Surgery

THE TONSILS AS FOCI OF INFECTION IN STREPTOCOCCUS HEMOLYTICUS CARRIERS *

H. J. NICHOLS, M.D.
Lieutenant-Colonel, M. C., U. S. Army
AND
J. H. BRYAN, M.D.
Major, M. C., U. S. Army
WASHINGTON, D. C.

The study of hemolytic streptococcus infections, which has been stimulated by the Army experiences of last winter, naturally includes the subject of carriers. We have done some work in this field and are convinced that the tonsils play a part that should be emphasized. It has already been shown that throat swab cultures demonstrate the presence of hemolytic streptococci in various percentages of individuals and that hemolytic streptococcus complications, for example, in measles, occur only in those with positive throats.[1] Throat swab cultures for hemolytic streptococci, therefore, have a practical value in the maintenance of clean and infected wards which has been confirmed by experience at this hospital.

INFECTION OF THE TONSILS

With the established importance of positive throat cultures as a starting point, our attention was directed toward localizing the focus of infection if there is one. For this purpose we made swab cultures in positive throat cases from each side of the nose, from the pharynx, from each tonsil and from the saliva. In making the nasal cultures, the swabs were passed into the nasopharynx. The results, which are shown in Table 1, were striking. The cultures of nasal swabs were either negative or showed a few hemolytic streptococcus colonies; the pharynx cultures were moderately positive; those of the saliva were slightly so, but the tonsil cultures showed in every case a rich growth of hemolytic streptococci. In the isolation and identification of hemolytic streptococci the methods adopted by the Medical Department of the United States Army were followed.[2]

TABLE 1.—RESULTS OF SWAB CULTURES IN POSITIVE THROAT CASES *

Case	Right Tonsil	Left Tonsil	Pharynx	Saliva	Right Nostril	Left Nostril
1	+	+++	—	—	—	—
2	++	+++	+	—	—	—
3	++	++	++	+	—	—
4	++	++	++	—	—	+
5	++	++	+	—	+	+
6	+++	+++	++	+	+	—
7	++	++	+++	+	+	—
8	+++	+	+++	—	+	+
9	++	++	+++	—	+	+

* Positive findings are thus indicated: +, few colonies; ++, many colonies; +++, innumerable colonies.

These results pointed to the tonsils as possible foci of infection. One hundred pairs of excised tonsils were then examined by means of crypt cultures made with a platinum loop. Seventy-five pairs were found positive. The degree of infection in one or both tonsils of each pair was found to be as given in Table 2.

TABLE 2.—DEGREE OF INFECTION OF DISEASED TONSILS BY HEMOLYTIC STREPTOCOCCI

Pure hemolytic streptococci	31	70%
Predominating hemolytic streptococci	23	
Many hemolytic streptococci	16	
Few hemolytic streptococci	5	
No hemolytic streptococci	25	

These tonsils were removed on clinical grounds on account of size, presence of discharge from the crypts, cervical glandular enlargement and possibility of focal infection and not on account of the carrier state except in a few instances. The results of this series of examinations made it clear that diseased tonsils harbor hemolytic streptococci in a large proportion of cases.

The condition of the surface of tonsils was then compared with that of crypt contents in regard to streptococci, and it was clearly shown that the ordinary throat swab cultures may be negative while loop cultures from the crypts may be positive. The findings were:

> Normal cases, 50; percentage of throat swab cultures positive, 28; percentage of tonsil crypt cultures positive, 50; percentage of error in throat swab cultures, 44.

Additional evidence of the importance of the tonsils in carriers is found in the results of throat cultures taken after tonsillectomy, which will be referred to later.

Out of twenty-five cases of typical acute follicular tonsillitis, only one failed to show a rich culture of hemolytic streptococci. We believe that the ordinary case of tonsillitis is most frequently caused by hemolytic streptococci, and that the organisms in many cases persist and reinfect the individual or spread to others.

In persistent carriers of any infectious disease, some focus seems necessary, as pathogenic organisms do not seem able to live indefinitely on healthy tissue. In typhoid and cholera carriers the gallbladder, liver or kidneys are recognized foci rather than the intestine or urinary tract as a whole. In diphtheria carriers the tonsils are being recognized as the principal focus.[3] We believe the same is true in streptococcus carriers. The possibilities, of course, include the nose, the sinuses, the gums and the adenoids; but in our experience the tonsils are by far the most frequent foci. Sections made of positive tonsils have usually shown erosion of the epithelium of the crypts with exudate.

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* From the Laboratory Service and the Ear, Nose and Throat Section of the Surgical Service of the Walter Reed General Hospital, Washington, D. C. In this work the writers were assisted by: Capt. C. O. Stimmel, Capt. William H. Huntington, Lieut. S. A. Alexander and Lieut. E. Sturm.

[1] Cole, Rufus, and MacCallum, W. G.: Pneumonia at a Base Hospital, The Journal A. M. A., April 20, 1918, p. 1146. Levy, R. L., and Alexander, H. L.: The Predisposition of Streptococcus Carriers to the Complications of Measles, ibid., June 15, 1918, p. 1827.

[2] Methods for the Isolation and Identification of Streptococcus Haemolyticus, Adopted by the Medical Department, U. S. Army, June 1, 1918.

IDENTIFICATION OF CULTURES

One hundred strains of streptococci have been studied by Captain Stimmel for cultural reactions in His sugar mediums with results shown in Table 3. In this work each tube was checked for purity and growth by smears and by transfers to blood agar plates. In case of contamination of any tube or lack of growth in negative tubes, the work was repeated. Fresh serum was found necessary for good growth, and serum water controls were used without sugar, as some serums naturally contain over 0.5 per cent. of glucose. Tests were also made for bile solubility, hemolysis in blood broth and morphology. The results were clean cut and uniform.

TABLE 3.—CULTURAL REACTIONS OF STREPTOCOCCI

Source of Strain	Number	Glucose	Lactose	Saccharose	Mannite	Maltose	Dextrin	Inulin	Salicin
Tonsil...........	43	+	+	+	—	+	+	—	+
Throat...........	26	+	+	+	—	+	+	—	+
Empyema........	18	+	+	+	—	+	+	—	+
Miscellaneous.... (middle ear, etc.)	11	+	+	+	—	+	+	—	+

In other words, no differences were found in strains from empyema fluids and surgical conditions, as compared with those from throats and tonsils. Of course, there may be differences in immunity reactions; but for the present in the prophylaxis of pneumonia and empyema, no differentiation is available. Several tonsil strains tested for virulence were low, requiring 0.5 c.c. to kill a mouse; but by mouse passage they became more virulent.

THE CURE OF CARRIERS

In our experience the only radical method of curing carriers is excision of the tonsil, which is successful except in a few cases in which other foci are present in the gums or elsewhere. The problem of chemical or mechanical disinfection has been attacked at this hospital as well as elsewhere with some enthusiasm, but a short experience has shown the futility of most measures. It has been found that a certain number of carriers on no treatment give two successive negative cultures in about three weeks. With dichloramin-T, Dobell's solution and hot alcohol, a few carriers cleared up in about the same time.

Under daily use of 25 per cent. silver nitrate, several cases became negative in about one week; but in some of these cases the crypts were still positive after negative throat cultures. In order to test the disinfecting power of silver nitrate, several excised streptococcus tonsils were submerged in 25 per cent. silver nitrate for five minutes. They were then washed in salt solution and incised, and cultures were made from the crypts. All these cultures were positive. In cases with a few open crypts, the silver nitrate treatment may be effective; but in most tonsils it is impossible to sterilize the crypts by this means.

The difficulty in sterilizing the tonsil may be realized by attempting to inject all the crypts with lampblack in paraffin; after all visible openings have been injected and the paraffin allowed to cool, incision of the tonsil will show a number of perfectly good crypts that have escaped the injection. If this is so with excised tonsils, the impossibility of mechanically or chemically disinfecting this tissue in vivo is easily understood.

The change noted in throat cultures after tonsillectomy was striking as compared with any other method. Twenty-seven out of thirty-one cases showed a second consecutive negative culture in eleven days. In the cases that did not clear up under tonsillectomy, there were foci in the nose or gums, and the cases became negative when these were attended to. No case of a carrier has been found in men who had previously had their tonsils properly removed.

COMMENT

It is evident that the removal of diseased tonsils is indicated not only for the good of the individual but also for the good of others, because it reduces the number of carriers of *Streptococcus hemolyticus.* Whether a carrier with healthy tonsils should be operated on simply because he is a carrier may be a debatable point; but in view of the lack of standards for "healthy" tonsils, it is justifiable to operate in our opinion, provided the case does not clear up in a few weeks spontaneously or under silver nitrate.

The practicability of materially reducing the number of carriers by this means is also a debatable point, as the number of carriers may be large, running at times from one third to one half of the military population. It is at least possible, however, to examine the tonsils of chronic carriers and to remove those tonsils which are manifestly diseased.

CONCLUSIONS

1. The tonsils are the principal foci of infection in throat carriers of *Streptococcus hemolyticus.*

(*a*) Cultures taken from different parts of the nose, mouth and throat show more streptococci in the tonsils than elsewhere.

(*b*) Cultures from excised tonsils show streptococci in 75 per cent. of cases.

(*c*) Crypt cultures show a higher percentage of positive results than surface cultures.

(*d*) Excision of the tonsils renders the throat negative in nearly all cases.

2. The streptococci isolated from tonsils and throats show no cultural difference on sugar mediums from those obtained from empyema fluids.

3. Excision is the only radical method of curing carriers of the infection.

(*a*) Dobell's solution, dichloramin-T and hot alcohol had little better effect than no treatment.

(*b*) Silver nitrate, 25 per cent., gave the better results in negative throat cultures, but the crypts frequently remained positive.

4. The presence of hemolytic streptococci in pathologic tonsils is an additional reason for their removal.

Obligation of Physician to Report Births.—The state protects the physician in his practice, and on ethical ground has a right to expect him to comply with the laws affecting his practice, and on legal grounds to demand the registrations of births as a matter of public welfare. Court decisions have held this many times.—W. J. V. Deacon, M.D., State Registrar, Kansas.

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[3] Keefer, F. R.; Friedberg, S. A., and Aronson, J. D.: A Study of Diphtheria Carriers in a Military Camp, The Journal A. M. A., Oct. 12, 1918, p. 1206.

STUDIES ON IRRITABLE HEART

PRELIMINARY REPORT

LOUIS M. WARFIELD, M.D. (Milwaukee)
Major, M. C., U. S. Army
AND
FRED. M. SMITH, M.D. (Chicago)
First Lieutenant, M. C., U. S. Army
JEFFERSON BARRACKS, MO.

In an attempt to discover if there is any method of diagnosing the so-called neurocirculatory asthenia before the men enter service, we have been engaged in an intensive study of the syndrome. We feel that the work has gone far enough to justify us in presenting our results briefly, leaving the more detailed statistics for later presentation. Our purpose is to state our reasons for considering that we can detect these cases at the recruiting depots or at the Local Examining Boards and thus save both applicant and government time and money.

Careful study of the reports of Lewis[1] and his associates leads us to believe that we are not dealing with the same class of patients. His patients were invalided from the front, where overexertion and shell shock were factors. Our patients have come from civil life, where men have been doing their daily tasks under no great strain. He was able to return 20 per cent. to active duty. Our experience coincides with that of Major Robey,[2] who found that these men were not benefited by graded exercises. These men, for the most part, had been working daily at some vocation. The work was uniform, required no sudden strain, no sudden call on the reserve of the heart. Frequently men told us that they themselves had found certain work too hard and had voluntarily sought easier and, at times, sedentary, jobs. This distinction, we consider, is important.

We have studied 435 cases. Two hundred of these were referred for examination at Camp Upton and Camp Beauregard (F. M. S.). The 235 cases that both of us have studied more in detail at Jefferson Barracks will, for the most part, form the basis of this report. These represent the referred cases at the recruit depot among 20,000 examinations during the months of July and August.

HISTORY

The careful history from the man who has tachycardia is almost the most important factor in the determination of a man's fitness for the Army. The men who have shortness of breath, a feeling of exhaustion out of all proportion to the exertion made, palpitation of the heart, precordial pain and dizziness on exertion in civil life have invariably failed in their military training. The 200 patients that were examined by one of us at Camp Upton and Camp Beauregard were men who had broken down in training. With very few exceptions, they complained of subjective symptoms that dated back into civil life, in some instances as far back as childhood.

Our plan has been to enter all patients into the hospital for observation who could not be rejected at once in the examining barracks. Patients with frank exophthalmic goiter, of evident hyperthyroidism and of patent pulmonary tuberculosis were rejected at once. The cases studied represent the men who were not normal, who had tachycardia and who, we considered, had not enough symptoms and signs to reject at once. One hundred and five patients have been put in hospital and been given graded exercise. The time in the hospital varies from four days to three weeks. Sixty-five have been discharged as unfit, all of whom had symptoms prior to the time they were drafted. Eighteen have been accepted for military service, all of whom had no subjective symptoms on exercise. These men were observed because of tachycardia.

ETIOLOGY

The irritable heart is frequently a symptom of some well recognized disease. In the study of 235 cases from the standpoint of etiology, the diagnosis of pulmonary tuberculosis was made in eighty-eight. In no instance was the opinion of one man taken as final. Frequently, the diagnosis was made on the basis of the findings of three or four examiners. Forty-one of the most doubtful cases were observed in the hospital. Here, these patients were given graded exercises, the temperature was taken every three hours, and frequent chest examinations were made. Roentgenograms were made in a number of cases, and were often of considerable value. The exercise caused a rise of temperature and brought out positive chest findings in cases which, previous to exercise, were only suspicious.

Seventy-three patients were discharged with the diagnosis of hyperthyroidism.[3] In all these, there were definite eye signs, as lagging of the lids, poor convergence and occasionally exophthalmos. The thyroid gland was enlarged in every instance. There was a tremor of the hand and tachycardia. The systolic blood pressure was usually increased, ranging from 120 to 170 mm. of mercury.

In thirty cases that gave a typical history of "effort syndrome," nothing was found to account for the condition. Twenty-one of these patients were rejected in the examining barracks with the diagnosis of irritable heart without hospital observation. On the basis of our later results, we feel that, possibly, tuberculosis could have been found in some of these men, had they been put under observation.

Three men had the symptoms and physical findings of early cirrhosis of the liver. One had chronic malaria, one bronchial asthma, and twenty-one are still in hospital under observation.

Eighteen men were sent to duty. These were men who had been sent to the hospital because of tachycardia, and had at no time subjective symptoms. They all responded to exercise well and, so far as we know, are having no difficulty in their training.

GRADED EXERCISES

The graded exercises have proved very valuable, first, in the determination of a man's fitness for the Army, and second, in establishing the diagnosis.

Those individuals who are not able to do the simplest exercises without distress and who have shown no improvement from day to day are very obviously not fit for military service. Those men who have given a history of having had subjective symptoms in civil life have all made complaints following these exercises. Those cases in which the irritable heart had as its basis pulmonary tuberculosis have usually responded poorest to the exercises.

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[1] Lewis, Thomas: Report, Medical Research Committee, London, 1918.

[2] Robey, W. H., Jr., and Boas, E. P.: Neurocirculatory Asthenia, The Journal A. M. A., Aug. 17, 1918, p. 525.

[3] We have called these cases hyperthyroidism. We ourselves are not satisfied with the term. We feel that exophthalmic goiter would probably be a better term to use as all the cases were potentially Graves' disease. The term is in such general use that we have here employed it to designate cases not frankly exophthalmic goiter, but with certain of the Graves' disease stigmata.

In forty-one cases, we feel confident that the exercises brought out positive findings in the chest and caused a rise in temperature, so that we were justified in making the diagnosis of pulmonary tuberculosis. Thirteen of the patients under observation were discharged with the diagnosis of hyperthyroidism. The exercises in those cases brought out signs that previously were only suggestive.

SUMMARY

For the present, we feel safe in saying it is possible to detect the irritable heart before a man is inducted into service. This can be done, first, by taking a careful history, paying particular attention to previous attacks of dizziness or fainting, exhaustion, precordial pain, and pounding of the heart on *slight exertion;* second, by noting the unusual physical response to the hopping exercise and the increase in the pulse rate out of all proportion to the exercise.

THE INFLUENZA EPIDEMIC AT CAMP DIX, N. J.

MARTIN J. SYNNOTT, A.M., M.D. (Montclair, N. J.)
Major, M. C., U. S. Army; Chief of Medical Service
AND
ELBERT CLARK, Ph.D., M.D. (Chicago)
Major, M. C., U. S. Army; Chief of Laboratory Service
CAMP DIX, WRIGHTSTOWN, N. J.

The influenza epidemic began at Camp Dix, September 15, and ended, October 6. The number of daily admissions increased rapidly and reached the maximum, September 26, on which day 806 patients were received, making a total of 4,025 in the hospital on that date. The number then decreased daily, reaching the normal average of eighty admissions, October 7. During the twenty-two days of the epidemic, 6,500 patients were cared for. Approximately 6,000 of these men had influenza. There have been 800 deaths due to the epidemic. Four of our nurses and one dietitian died during the epidemic, contracting the disease while on duty. One medical officer was taken ill while on leave and died from bronchopneumonia a few days later at the Massachusetts General Hospital.

When the epidemic began to subside and the hospital discharges to increase, wards were consolidated as rapidly as possible. The emptied wards were renovated and disinfected thoroughly and all bedding sterilized in the steam autoclave before being used again for noninfluenza patients.

ADMINISTRATION

To take care of the large number of patients, all of the forty-eight wards of the hospital, except six, were turned over to the medical service; but in spite of this, it was found necessary to expand, and an annex was started in the camp. Through the cooperation of the headquarters authorities and the camp surgeon, a number of empty barracks were quickly equipped, a medical and nursing staff organized, and in this way eighteen additional wards with accommodations for 1,100 patients were provided. The annex was used for the most part for convalescent patients, and the patients were moved there from the base hospital as rapidly as safety permitted. Our rule was not to transfer patients until the temperature had been normal for forty-eight hours. They were kept in bed at the annex for another forty-eight hours and not discharged until the temperature had been normal for ten days.

By this plan overcrowding was avoided and, as soon as possible, arrangements were made by which each influenza and pneumonia patient in the hospital was given 100 square feet of floor space. All patients, including those on the porches, were placed in cubicles. Nurses, medical officers and orderlies wore gauze mouth and nose coverings while on duty. Nasal discharges and sputum of patients were disinfected. A 2 per cent. solution of tincture of iodin in physiologic sodium chlorid solution was used for oral and nasal hygiene. Floors of all wards were gone over daily with a cloth wet in disinfectant. Individual drinking cups were provided. Particular care was given to the disinfection of thermometers and other utensils as they passed from patient to patient. Enlisted attendants in wards wore white cotton coats and trousers. Medical officers and nurses were instructed to disinfect carefully their hands before and after the handling or examining of patients and before leaving the ward, or passing from one class of patients to another. Pails containing a disinfecting solution were provided at convenient places in every ward.

Blankets, mattresses, mattress covers and pillows were disinfected by steam before being used for another patient. Soiled linen was immersed in a 2 per cent. dilution of liquor formaldehydi before being sent to the laundry. The clothing of patients was disinfected by steam or formaldehyd before discharge.

For patients too ill to use covered sputum cups, paper napkins were provided for the reception of sputum and nasal secretions. At the head or side of each bed a paper bag was fastened with a pin or adhesive plaster. These bags were used for napkins, gauze, swabs and other infected refuse and burned when full.

The medical service was directed by the medical chief and an assistant. There were ten ward supervisors, admitting officers and consultants. These men met with the chief for a conference at 8 a. m. daily, when the work of the day was outlined and discussed. There was a daily conference of all medical officers attached to the medical service (about eighty-five officers at the time of maximum stress) at 1:15 p. m. when matters requiring advice, questions of discipline, treatment, etc., were gone into fully.

The patients were grouped as rapidly as possible, all uncomplicated influenza cases being kept together, and the cases complicated by pneumonia gathered in separate wards.

The following laboratory tests were ordered for all pneumonia patients:

1. Routine urine examination.
2. Urine precipitin test, for type of pneumococcus.
3. Blood examination: white corpuscle and differential blood count.
4. Blood culture (only in serious cases).
5. Sputum: Collected in sterile Petri dish, after patient had rinsed mouth and throat with physiologic sodium chlorid solution, to eliminate contaminating organisms as much as possible; for smear and white mouse necropsy to determine the type of pneumococcus.

The following rules are laid down for the guidance of ward surgeons in the general management of convalescent pneumonia patients:

1. It is advisable that in all serious or severely toxic cases of pneumonia, the patient shall remain in bed for at least two weeks after temperature is normal.
2. Convalescent patients are to be transferred to the convalescent ward, as soon as this can be safely done.
3. No patient will be transferred without the approval of the consultant. Patients so transferred will be carried on litters, not wheel chairs.
4. Before discharge from the hospital, all pneumonia patients are to be sent to the roentgen-ray laboratory for fluoroscopic heart examination and cardiac measurement.
5. Generally speaking, no patient is to be discharged until the heart is normal in size, as determined by fluoroscopic measurement.
6. No influenza patient is to be returned to duty until the temperature has been normal for ten days.

All ward surgeons were repeatedly warned to be on the alert for the early detection of empyema and were given these instructions:

1. Consult your supervisor as to advisability of exploration.
2. Technic of Exploration: A 10 to 20 c.c. Lüer syringe and appropriate needle. One per cent. cocain anesthesia by infiltration at site of puncture. Send fluid to laboratory (in syringe in which fluid is obtained) for smear and culture labeled "Chest fluid for smear and culture."
3. Roentgen ray to be requested as indicated.
4. Aspiration: If exploration has been advised and if fluid is sterile, do not remove by aspiration until after consultation and unless something in clinical condition warrants it, i. e., exacerbation of fever, pressure symptoms, respiratory distress, etc.
5. Repeated explorations are to be avoided on account of danger of conveying fresh infection from lung to pleura incident to puncture of lung by exploring needle. The pleural fluid may be sterile. Avoid infecting it.
6. If fluid is thin enough to run through a Potain aspirating outfit, it should be removed in this way, as often as symptoms indicate. If after consultation a case is considered to be one requiring thoracotomy, the sick soldier will be transferred to the surgical ward for operation.

In addition to the large stationary outfit in the roentgen-ray laboratory, we have two portable bedside machines. These were kept almost constantly in use during the epidemic.

CLINICAL FEATURES

The usual history was one of gradual onset with prodomes for four or five days prior to admission—consisting of headache, malaise, backache, myalgia, fever and chills or chilly sensations, and marked prostration. There was a history of anorexia, and of aggravation of symptoms, after drill or exercise. Occasionally the onset was sudden, sharp and severe. On admission there was cough, often with rusty sputum, a temperature of 103 F., occasionally hyperpyrexia, respirations of 28 or 30, the pulse between 80 and 120. A low temperature in a severe case was an unfavorable sign. The blood count showed usually leukopenia. The urine contained albumin and casts. The patients looked very ill, but often did not feel so. Few complained of sore throat or the early sticking pains in the chest, aggravated by coughing, so commonly observed in beginning pneumonia.

One third of our cases presented frank signs of pneumonia. Every patient who had fever, prostration, rapid pulse, increased respirations, cough and bloody sputum was at once put down as a pneumonia suspect, which diagnosis could usually be confirmed later by physical signs and roentgen examination.

Frequently no physical signs of pneumonia were apparent on the initial examination. A day or two later bronchopneumonia was discovered, the lobules subsequently tending to become confluent. This condition sometimes gave the physical signs of a lobar pneumonia, but the real condition was repeatedly demonstrated at necropsy. The roentgen ray was an invaluable aid in the diagnosis of such cases.

The outstanding feature of the disease was the extreme toxemia noted in the serious cases. We could predict almost from the first inspection the outcome of each case. There has been a sharp line of demarcation between the serious and mild cases. In the former, many patients developed a cyanosis early in the disease and died promptly, after periods varying from a few hours to three days after admission.

The cyanosis appeared early and was progressive. It was a fairly constant and characteristic symptom in the severe cases. This intense cyanosis was a striking phenomenon. The lips, ears, nose, cheeks, tongue, conjunctivae, fingers and sometimes the entire body partook of a dusky, leaden hue. Frequently this cyanosis was apparent before there were any demonstrable physical signs of pneumonia. The cause could not be ascertained, a few spectroscopic readings failing to show absorption bands of methemoglobin. As necropsy revealed marked so-called compensatory emphysema in these cases, and as cyanosis is a common accompaniment of emphysema, possibly this was in some way accountable for the condition. Otherwise a purely mechanical conception of the mode of production of the cyanosis seems untenable. Lividity, occurring early in the disease proved to be an ill omen.

Very often this cyanosis came on suddenly in patients who had been doing well. It was not due to cardiac dilatation. The pulse was often slow, full and regular in such cases, and remained so, with a rate under 100, almost until death.

The disparity between temperature and pulse was striking. Patients with temperature between 104 and 106 not infrequently had a pulse rate below 80. This we regard as a strong point in differential diagnosis between these influenzal pneumonias and those of pure pneumococcic origin.

The disease was a veritable plague. The extraordinary toxicity, the marked prostration, the extreme cyanosis and the rapidity of development stamp this disease as a distinct clinical entity heretofore not fully described.

It is entirely different from our previous pneumonia epidemics. It is fair to state that it is primarily a profound, rapidly progressing septicemia and toxemia in which pneumonia is an important but somewhat secondary factor.

There was noted in many instances a distinct tendency to relapse. In several of our mild cases, after a day or two of nearly normal temperature, exacerbations occurred and the infection changed to the severe, toxic type.

Herpes labialis was relatively infrequent, but became more common as the disease advanced. It was seemingly of little help in prognosis, as many with herpes died, contrary to the teachings of the older clinicians.

The sputum showed varying characteristics. It was mucoid, mucopurulent, blood streaked, frothy and bloody, the blood pure as in infarct.

In one of our cases it was thin, brown, without froth and homogeneous (prune juice variety). At times it was rusty but lacking tenaciousness and of the consistency of typically pneumonic sputum; it was odorless. In one case the patient coughed up a large quantity of homogeneous, thick, purulent, greenish sputum at one time.

Necropsy in this instance revealed multiple bronchopleural fistulas leading to an encapsulated empyema on the right side.

Tachypnea was constant and variable in rate. The expiratory grunt was uncommon.

The cough differed materially from that of lobar pneumonia, being free, often painless, sometimes paroxysmal, resembling the cough of pertussis. One may reason from this that pleurisy was relatively uncommon as an initial feature. Pleuritic rubs were occasionally heard, however, while diaphragmatic pleurisy with its referred pain was not uncommon, often simulating a condition suggestive of appendicitis.

Flushing of the face was common. An early generalized erythema resembling that of scarlatina, most noticeable on the chest and back, was often observed. Miliaria (sudamina) was common later in the disease, especially in lethal cases in which sweating was frequent and excessive.

The throat was usually injected, but not painful; the tonsils were not swollen as a rule; there was marked conjunctival congestion at the outset of the disease. The tongue was variable: usually coated, moist in milder cases, dry, cracked and occasionally bleeding in severe cases. Sordes appeared frequently on the teeth.

Hoarseness was frequent, due either to the trauma of coughing or to superficial laryngeal ulceration or edema, as demonstrated at necropsy.

The mental condition was either apathetic or there was an active delirium. Cerebration was slow at the onset; the sensorium was numb; a noticeable incident in attempting to elicit history was the frequent apparent disregard of one's question or a response with an interrogatory and blank "What?" or "Sir?" Possibly this was due to a defect of ratiocination, rather than a faulty sense perception (tubotympanic catarrh with retracted membrana tympani or straight lethargy). The patient's assurances and statements as to the condition in many instances were unreliable, a moribund patient stating that he felt very well, requesting permission to get out of bed, reading the daily newspaper in some instances audibly and intelligently, or laying plans optimistically for the future. In other cases, apprehensiveness was most striking, the patient fearing for the future, predicting in a gruesome way the time of death, and making requests to be carried out posthumously. In moribund patients, motor and psychic restlessness was remarkable. In some cases the typical typhoid state existed: stupor, low muttering delirium, subsultus, tendinum, carphology, incontinence of urine and feces; one patient lay for several days stupid with the eyes wide open following imaginary objects about the ward (coma vigil).

In the lungs, the physical signs varied from impairment of resonance, especially over the lower lobes, with diminution of the vesicular murmur; with showers of crepitant and later subcrepitant râles to straightforward signs of consolidation, namely, dulness, bronchial breath and voice, increased fremitus and whisper with a few consonating râles. Often the only evidences of early pneumonia were the signs first enumerated and these confined to a small area or a number of small areas, most commonly at the upper part of the right lower lobe or in either axilla, high up.

In the abdomen, meteorism occurred in some cases; in certain lethal cases it was excessive. Abdominal pain and tenderness were frequent, possibly not entirely due to pleurisy, but in the light of necropsy findings, to infection and hemorrhages in the rectus muscles. In one case necropsy revealed the presence of bilateral abscess in the lower rectus (Zenger's hyaline degeneration). The liver percussed large but was not often felt, owing to abdominal resistance. The spleen could be felt at or just below the costal margin in about one third of our cases. This finding was of little value, however, as many of these subjects were of the status lymphaticus type, in which cases splenomegaly is often observed.

Weakness and tremulousness of the extremities were noticeable manifestations in many cases.

Among accidents of the disease may be noted one case of death shortly after admission with no forewarning, and one case of sudden death many days after febrile period when the patient was regarded on the high road to convalescence.

EMPYEMA

There have been fewer cases of empyema in this epidemic than might be expected, owing to the fact of the extreme toxicity of the disease with the result that death has occurred early. Most of the cases examined postmortem showed lesions in the pleura which would undoubtedly have resulted in empyema had the patients lived longer. Twenty cases of frank empyema have been discovered up to the present time.

Our experience here has taught us that early operation is not advisable in empyema. Aspiration with the Potain apparatus is resorted to when fluid is demonstrated to be present in the pleural cavity, unless the fluid is found to be sterile, in which event it is not removed. Aspiration may be repeated at two to four day intervals. Many patients do well under this plan of treatment; and if a costectomy is later deemed advisable, the patient's chances of recovery are very much enhanced if this operation is delayed until the acute stage of the disease has been passed, and the patient has begun to immunize himself.

The following type case illustrates the wisdom of this procedure:

Col. F. D. L., taken ill while in New York, Sept. 21, 1918, had a severe chill the next day at 3 a. m. He traveled back to Mount Holly in the afternoon. He complained of fever, chilliness and drowsiness. Signs of a diffuse bronchopneumonia with involvement of all lobes quickly developed. On the fourth day there was a remission in temperature and the patient felt better, but on the fifth day he had an exacerbation and the condition rapidly became critical. His fever was continuously high and expectoration was bloody. There were several attacks of hematemesis and one rather severe hemoptysis. The patient became delirious, September 28. This condition persisted one week. He was cyanosed and toxic, with signs of dilatation of the right ventricle and myocardial failure. The pulse rate ranged between 140 and 150, with respirations between 44 and 50 a minute. A pronounced jaundice, due probably to a hemolytic infectious process, developed about this time. On the fifteenth day, signs of fluid developed at the base of the right chest. Exploration in the eighth interspace at the posterior axillary line revealed a cloudy serofibrinous exudate, which on smear and culture showed the staphylococcus. Next day, 250 c.c. were removed by aspiration. On the eighteenth day, 400 c.c. of slightly cloudy serous fluid were removed, and on the twentieth day 600 c.c. of frankly purulent fluid were obtained. On the twenty-third day, 1,120 c.c. of similar fluid were removed by aspiration. After this aspiration the patient's condition began to improve at once, and at present writing his temperature is normal, and the prognosis for recovery is excellent. The sputum on white mouse necropsy showed the Type IV pneumococcus. The urine contained albumin and casts. Cultures of the blood were made twice but were negative on each occasion. All aspirated fluid has shown a pure culture of *Staphylococcus aureus.*

OTHER COMPLICATIONS

The complications other than empyema associated with the epidemic were those ordinarily encountered in an infectious disease of great virulence. Pulmonary edema was a comparatively frequent terminal condition. One of the most striking of the complications was hemorrhage from the mucous membranes, especially from the nose, stomach and intestine. Frequently pneumonia patients would have hemoptysis like the hemorrhage of tuberculosis. Bleeding from the ears, and petechial hemorrhages in the skin also occurred. Purpura was seen rather frequently. Other complications were phlebitis, thrombosis, or embolism of peripheral arteries (with gangrene of the foot in two cases), toxic erythema, vomiting, diarrhea, conjunctivitis, convulsions, purulent peritonitis, inflammation of the accessory sinuses and of the middle ear, and pericardial effusion. A pronounced jaundice, not obstructive, as the stools are not acholic and probably of infectious origin, was noted in many of our severe cases. Retention of urine was not uncommon.

In several instances the infection produced a pronounced hemolytic effect with rapidly progressive anemia. In one instance, that of a medical officer, the red cell count was reduced to 1,600,000, with 50 per cent. hemoglobin on the fifth day of his disease. This patient is recovering.

A report of our series of cases, twenty in all, showing subcutaneous emphysema of the tissues of the neck, face, upper portion of the chest and arm will be published elsewhere.

Other rarer complications were meningismus, fibrinous and serofibrinous pleurisy, rupture of an encapsulated empyema into the bronchus, thyroiditis, pneumothorax and cerebral thrombosis or embolism (one case showed hemiparesis, hemianesthesia, and probably hemianopia).

TREATMENT

Influenza cases were treated symptomatically. Codein or heroin was found useful in relieving the distressing cough. Medicated steam vapor inhalations were found useful in relieving laryngeal irritation.

In the pneumonia cases, digitalis is begun early and given in full dose for forty-eight hours. It is then discontinued or reduced to one or two doses daily, after the heart muscle is digitalized.

Abdominal distention is guarded against, and when symptoms of this condition develop, an enema is given or, if necessary, pituitary solution hypodermically is administered.

If the patient is toxic or unable to take fluid freely by mouth, water is given by proctoclysis, hypodermoclysis or intravenous administration.

In the pulmonary edema cases, postural treatment, the Trendelenburg position being employed, was found useful in a few instances; in others it seemed to add to the distress. Atropin or belladonna did not prove of any value in these cases.

The diet that we have recommended for influenza and pneumonia cases is a nourishing one providing calories in excess of 3,000 a day. It includes such articles as gruels, broths, purées, eggs, and milk fortified with cream and lactose.

To lessen the danger of relapses and exacerbations, we believe it is of the utmost importance to keep all patients in bed until the temperature has been absolutely normal for at least forty-eight hours. The rule not to discharge patients until the temperature has been normal for ten days has been rigidly enforced.

SERUM THERAPY

Serum was administered in cases in which the laboratory reported the Type I pneumococcus. It was given only after desensitization and under the direction of the medical officer to whom the supervision of pneumonia patients had been entrusted. It was administered intravenously in doses of from 60 to 100 c.c. at twelve hour intervals until the temperature remained below 101 F.

SPINAL PUNCTURE

As many soldiers who died from pneumonia were shown at necropsy to have had an infection of the meninges with the pneumococcus organism, in a few instances of Type I, a lumbar puncture was advised in every case in which any symptoms of meningeal irritation developed. The spinal canal was drained, and the fluid withdrawn was sent to the laboratory for examination.

The precipitin test on the spinal fluid is rapidly done and the type thus easily determined. If the laboratory reported the Type I pneumococcus, serum was administered at once intraspinally (20 c.c.) and a desensitizing dose of 5 c.c. given subcutaneously. Five hours later, from 80 to 100 c.c. were given intravenously.

PROPHYLACTIC IMMUNIZATION

In the course of the epidemic the War Department offered prophylactic immunization to the camp, and several thousand inoculations have been given. These are given only to volunteers, but all medical officers, nurses, orderlies and soldiers in good health are strongly advised to take it. The vaccine consists of 10,000 million of each of the three types I, II and III of the pneumococcus. The dead organisms are suspended in cottonseed oil, making thus a lipovaccine. One dose is administered. The advantage claimed for oil over saline is that the vaccine is more slowly absorbed and hence the period of "negative phase," with lowered resistance, is avoided. Our experience at this camp substantiates this claim. All reactions have been light.

Observations following the use of this vaccine at Camp Upton indicate not only successful immunization against pneumococci of Types I, II and III, but also a very low incidence of streptococcus cases among the vaccinated. The vaccine is given subcutaneously.

Pneumonia is the most serious complication, and if this can be avoided, influenza will be robbed of most of its terrors.

PATHOLOGY AND BACTERIOLOGY

The pathology of the cases of influenzal pneumonia coming to necropsy at Camp Dix have presented very diverse pictures. In the cases that we have seen at necropsy the lesions were confined for the most part to the chest cavity. This is especially true of the cases which ran a rapidly fatal course. In the latter, the greater part of the visible pathologic changes consisted of very much congested and hemorrhagic, water-logged lungs. Some of the patients who had been in the hospital two weeks or longer presented a pathologic picture more or less like those bronchopneumonia patients coming to necropsy here last spring and those described by MacCallum for the pneumonia epidemic at Fort Sam Houston, Texas, during the winter of 1917-1918. Between these two extremes there have been many intermediate stages.

A notable feature of the cases in which death occurred early in the disease has been the extreme water-logged appearance of the lungs—lungs that are more or less completely filled and distended with a watery, bloody and frothy fluid, with petechial and larger hemorrhagic areas in the pleura. The right lung in one of our cases weighed just short of 4½ pounds and was absolutely devoid of air except for a small area at the apex of the upper lobe and small areas here and there along the anterior margin. The latter areas appeared to contain air under pressure. The remainder of the lung was tightly filled with fluid, was soft at all points, and did not contain any nodules or firmly consolidated areas. When the lung was held up, large quantities of fluid ran out. A slice cut from the lung lost about half its weight in fluid squeezed out by pressure with the hand. From this lung there was grown a nonhemolytic streptococcus and the influenza bacillus. Pronounced inflammation of the trachea and bronchi was noted in all cases in which death occurred early in the disease.

While only one case of well marked empyema has come to necropsy, several showed evidence of beginning empyema.

The heart showed nothing beyond dilatation of the right ventricle in the more acute cases. Early pericarditis has been seen in cases of longer duration.

The spleen as a rule showed no evident change.

The liver has weighed on the average approximately 2,000 gm. and has been more or less congested and yellowish.

The kidneys have shown a markedly congested and yellowish cortex.

The intestinal tract has shown in the majority of cases only slight congestion, and petechial hemorrhages in the gastric mucosa.

Blood examination in more than 700 cases has revealed in most instances an absence of leukocytosis in the more severe cases and during the acute stage of those running a more favorable course. The average has been about 5,000 white cells per cubic millimeter during the acute stage. The lowest recorded was 1,200.

The lymphocytes experienced a relative percentage increase. The red cell count has as a rule shown no decrease and frequently a high count during the acute stage. After two or three weeks in the hospital the picture changes in most of the serious cases. The red cell count decreases, sometimes to 1,600,000, and a leukocytosis develops ranging from 12,000 to 30,000 white cells, with polymorphonuclear leukocytes running as high as 95 per cent. So far as we have seen, the hemoglobin varies directly with the red cell count.

The urine in practically all seriously ill patients has shown a liberal amount of albumin with frequent casts.

BACTERIOLOGY

A large variety of organisms has been encountered in cultures and smears from the lung substance, from the bronchial mucous membrane and from the sputum. Streptococci and pneumococci have been most frequently found. The influenza bacillus (Pfeiffer's) has been encountered in sputum, bronchi and lungs, but we have made no particular effort to study it or to determine its frequency. It has, however, been encountered in the majority of cases when looked for. It has been recovered from the lung substance, from the bronchi, from the trachea and from the sputum, but in none of our large series (over 300) of blood cultures.

It is worthy of note that *Bacillus influenzae* has in no single instance been the sole invading organism. It has occurred, as stated, in the sputum and in secretions taken directly from the trachea and bronchi and from the lung, but it has never been in pure culture. It has been always associated with one or more pathogenic organisms. We have found it associated with *Micrococcus catharrhalis,* with the pneumococcus of various types, with *Streptococcus hemolyticus* or *viridans,* with pneumococci and streptococci, and in one or more of these combinations plus various other undetermined organisms. Of the latter class there have been observed; spirilla, gram-negative cocci and bacilli and frequently a pleomorphic gram-positive coccus. It would thus appear that, whatever rôle *Bacillus influenzae* plays in the present epidemic, it does not invade the blood and in all probability cannot solely be responsible for the fatal termination.

The sputum in more than 500 cases has been examined as to organisms and subjected to test for pneumococcus type by the white mouse necropsy method. The organisms mentioned above have been recovered, namely, pneumococci of various types, *Streptococcus viridans* and *hemolyticus, Micrococcus catharrhalis, Bacillus influenzae,* a gram-positive pleomorphic coccus, and gram-negative bacilli and cocci in the associations already noted. During the early phase of the epidemic when the pneumococcus was encountered, it as a rule failed to give any type reaction by either the precipitin or the agglutinin test. More recently Type III and to a less extent Type II pneumoccoci became more and more frequent.

Three hundred and fifty urines and 120 spinal fluids from seriously ill patients were subjected to the precipitin test. The results are comparable to those from the sputum examination, Types III and II became more frequent during the later phase of the epidemic. It would thus appear that neither pathologically nor bacteriologically are we dealing with a definite disease. There is a variety of conditions found at necropsy and a multiplicity of organisms in the various cases. The epidemic has, however, shown phases, the later of which tend to resemble the bronchopneumonia of streptococcus and pneumococcus origin.

CONCLUSIONS

We are of the opinion that the infection begins in the upper respiratory tract and is characterized by an intense exudative inflammation. A tracheitis and intense general bronchitis follow. The exudate in the severe cases is so thin and voluminous that neither coughing nor the ciliated epithelia suffice to throw it off. The lungs soon become water-logged. This exudate carries with it into the lungs the organisms ordinarily found in the nose, nasopharynx and throat, namely, streptococcus, Type IV pneumococcus, *M. catarrhalis,* Pfeiffer's bacillus, etc. A confluent lobular pneumonia ensues, caused by one or more of these organisms. In other words, we consider this a type of aspiration pneumonia.

However, it is by no means certain that *Bacillus influenzae* of Pfeiffer is the original infecting organism. We have not found it in pure culture in any of our cases examined postmortem. The disease may eventually be shown to be caused by some filterable virus or ultramicroscopic organism.

LOBAR PNEUMONIA AT A BASE HOSPITAL

LABORATORY AND CLINICAL STUDY OF FIFTY CASES *

LEON S. MEDALIA, M.D. (Boston)
Major, M. C., U. S. Army; Chief of Laboratory Service

AND

NATHAN S. SCHIFF, M.D. (New York)
First Lieutenant, M. C., U. S. Army

CAMP MACARTHUR, WACO, TEXAS

Early in March, 1918, it was suggested by one of us (L. S. M.) that a more careful study be made on the lobar pneumonia cases that appeared at this camp. The chief of the medical service was therefore requested to continue Lieutenant Schiff on duty as ward surgeon in charge of the pneumonia wards. It was felt that a comparative study of the cases clinically could best be made if the same man were continued on duty.

This article is a report on two series of cases. In the first, thirty cases were followed up in a routine way. Polyvalent antipneumococcus serum was administered in each case without regard to the outcome of the type determination. The second series is a study of twenty cases in which more complete laboratory methods were done, such as blood cultures, daily leukocyte counts, type determination, and the use therapeutically of Type I serum only in those cases that were found to be due to the Type I pneumococcus.

TABLE 1.—FREQUENCY OF POSITIVE BLOOD CULTURES IN PNEUMONIA AND ITS PROGNOSTIC SIGNIFICANCE (SECOND SERIES)

	Cases Examined		Blood Cultures				Mortality in Cases with			
			Positive		Negative		Positive Blood Cul.		Negative Blood Cul.	
Type	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.
I	3	15	1	33	2	66	—	—	—	—
II	9	45	4	44	5	56	1	25	—	—
III	—	—	—	—	—	—	—	—	—	—
IV	8	40	3	38	5	63	1	33	—	—

PNEUMOCOCCUS SEPTICEMIA AND ITS PROGNOSTIC SIGNIFICANCE

The incidence of positive blood cultures in lobar pneumonia has been variously stated as ranging from 20 to 50 per cent. The findings at the Rockefeller Institute[1] were 30 per cent. Our findings, as will be seen in Table 1, are 40 per cent., thus distributed: Type I, 33 per cent; Type II, 44 per cent., and Type IV, 38 per cent. The two deaths that occurred were both among those with the positive blood findings, one in Type II and the other in Type IV. The mortality of those with positive blood findings according to this table is 20 per cent., as compared with no mortality in the negative cases.

The technic followed was to obtain about 20 c.c. of blood from a vein at the elbow under aseptic precautions; plant 10 c.c. of the blood in a bottle containing 80 c.c. of meat infusion broth, and from 2 to 3 c.c. in each of a tube containing plain agar melted and brought down to 45 C., and plated. The cultures were kept under observation for from five to seven days and examined daily before a definite negative report was made. The typing was done mostly by Avery's cultural method. Both the agglutination and precipitin tests (the routine method was the agglutination test) were done in a number of cases. The mouse method was not used, owing to the impossibility of obtaining white mice.

TABLE 2.—COMPLICATIONS AND MORTALITY *

Type	No. Cases 1st Series	No. Cases 2d Series	Empyema 1st Series	Empyema 2d Series	Otitis 1st Series	Otitis 2d Series	Died 1st Series	Died 2d Series	Recovered 1st Series	Recovered 2d Series
I.........	3	3	0	1	0	0	0	0	3	3
II.........	4	9	0	2	0	3	0	1	4	8
III........	0	0	0	0	0	0	0	0	0	0
IV........	11	8	0	1	1	0	0	1	11	7
Undetermined...	12	0	0	0	0	0	0	0	12	0

* Comparison between Series 1, cases treated at random with polyvalent serum, and Series 2, those treated with Type I serum only when found due to Type I pneumococcus infection.

The pneumococcus obtained from the blood was in all cases found to correspond to the type obtained in the sputum.

The blood cultures were taken from two to nine days following the first initial symptoms, and in most cases from two to five days prior to the occurrence of the crisis.

It is significant that in the fifty cases here reported there was not a single case of Type III. It would be of interest to know whether the infection with this type of pneumococcus was as rare in other camps. In the thirty-one cases of lobar pneumonia reported by Cole and MacCallum[2] at Fort Sam Houston, Texas, they found only one case with Type III, or 3 per cent., as against 13 per cent. at the Rockefeller Institute.[1]

In a recent article by A. A. Small[3] in a report on the pneumonia cases at Camp Pike, the type determination findings were: Type I, 21 per cent.; Type II, 34 per cent.; Type IV, 45 per cent.—no Type III in the whole series. Our findings of those fifty cases that were typed were: Type I, 16 per cent.; Type II, 34 per cent.; Type IV, 50 per cent.—none of Type III in this series.

COMPARISON OF COMPLICATIONS AND MORTALITY BETWEEN THE TWO SERIES

In comparing the complications and mortality between the two series in Table 2, one cannot help but recognize the marked difference between them. One would expect the course of the disease to be much more severe and the mortality much higher in the first series of the thirty cases, which extended through the months of January, February and March, the coldest months of the year, as compared with the second series of cases, which extended through the last week of March, April and May, the wards and general treatment being the same and carried out by the same ward surgeon.

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*From the Clinical and Pathological Laboratory, Base Hospital, Camp MacArthur, Waco, Texas.

[1] Avery, Chickering, Cole and Dochez: Monographs of the Rockefeller Institute for Medical Research, No. 7, Oct. 16, 1917.

[2] Cole, Rufus, and MacCallum, W. G.: Pneumonia at a Base Hospital, The Journal A. M. A., April 20, 1918, pp. 1146-1156.

[3] Small, A. A.: Pneumonia at a Base Hospital, The Journal A. M. A., Aug. 31, 1918, pp. 700-702.

As a matter of fact, the course of the disease was much worse in the second series of twenty cases, which had in its favor the better weather conditions, having four empyema cases, three cases with otitis media, and two deaths; while in the first series of thirty cases there were no empyema cases, only one with otitis media, and not a single death. The only difference in the treatment between the two series was the use of the polyvalent antipneumococcus serum as a routine measure in the first series, while only in those that were of Type I infection, three cases out of the twenty, in the second series was serum given. The general impression as expressed by Major O. H. Campbell, chief of the medical service, was to the effect that the cases in which the polyvalent serum was administered ran a much milder course, the patients feeling better, breathing easier, and in every respect being much better off than those patients in the second series who did not receive serum, not having Type I infection.

The same impression was expressed by the various ward surgeons who observed the other cases that occurred in camp on whom polyvalent serum was used as a routine measure. Credit for the use of the polyvalent serum is due to Major Campbell, who instituted its use as a routine measure in all cases of pneumonia in the beginning, before we had any facilities in the hospital to do type determination. Because of the apparent good the polyvalent serum did and the easier course these cases ran and the low mortality obtained, the routine use of polyvalent serum was continued for a long time after the type determination was instituted in this laboratory.

SPECIFIC THERAPY: POLYVALENT VERSUS TYPE I SERUM

A critical analysis of Table 2, with special reference to the difference in complications and mortality between the first series, which received the polyvalent serum as a routine measure, and the second, which did not, is the strongest evidence, at least for the present, that we have in favor of using the polyvalent serum as a routine measure. We have no means of determining thus far the amount of antibodies Type IV organisms are capable of producing against their own respective types, while against Type II, according to the Rockefeller Institute,[1] an antiserum can be produced, though much less potent than against Type I. These facts, and the fact that Type II plus Type IV infections make up from 70 to 80 per cent. of the cases of lobar pneumonia that occurred in the camps, strongly suggest the advisability of using the polyvalent serum as a routine measure, until such time at least as monovalent serums can be produced against the respective individual types of infections. The potency against Type I infection of the polyvalent antiserum, as pointed out by *Wayson and McCoy*[4] of the U. S. Public Health Service, must in all respects compare favorably with that of Type I monovalent antiserum.

The important thing in the use of an antiserum as a routine measure is the avoidance of anaphylaxis. This may be accomplished by the intradermal and subcutaneous test. The technic as followed in this hospital is the administration intradermally, on the flexor surface of the upper arm, of 0.5 c.c. of a 1 per cent. antipneumococcus serum in sterile saline, controlled by 0.5 c.c. of saline solution introduced at points from 3 to 4 cm. apart on the same level of the skin, followed, if negative, in fifteen minutes by 1 c.c. of straight serum subcutaneously. If the subcutaneous test is found negative, it is followed one hour later by 50 c.c. of polyvalent serum intravenously. This dose is repeated from every twelve to twenty-four hours until the temperature, respiration and pulse warrant its discontinuation.

If properly carried out, this intradermal and subcutaneous skin test should do away with the objection raised against the routine use of the polyvalent antipneumococcus serum of unquestionable potency (as tested by the U. S. Public Health Service) in pneumonia due to pneumococcus infections of whatever type.

TOXIC GASES IN MODERN WARFARE

WITH SPECIAL REFERENCE TO DIAGNOSIS AND TREATMENT

GEORGE WILLIAM NORRIS, M.D. (Philadelphia)
Lieutenant-Colonel, M. C., N. A.
FRANCE

The idea of employing gases in warfare is, of course, not new. In 360 B. C., the time of the Trojans, resinous woods, sulphur and pitch were employed. Long ago the Chinese availed themselves of the so-called "stink-pots" to choke and nauseate their adversaries. The Turks used "Greek fire" against the crusaders. In more modern times we find General Joubert protesting to General White, during the Anglo-Boer War, because the bursting lyddite shells caused suffocation. In the latter instance the carbon monoxid poisoning was, of course, entirely incidental to combustion and not primarily a method of destruction.

Under the guise of studying industrial intoxications, the Hun had experimented extensively with chlorin, bromin, formaldehyd, nitrous vapor, sulphurous anhydrid, etc., long before the beginning of the present war. The knowledge and experience thus gained was first employed in warfare in April, 1915, when large quantities of cylinder gas were discharged against the Canadians and Turcos at Ypres with such ghastly effect.

Since that time various gases, either simply or in combination, have been employed, nearly all of them being based, so far as their production is concerned, on chlorin or methyl alcohol. Lately, arsenical compounds have also been used.

METHODS OF EMPLOYMENT

1. Cylinder, drift or cloud gas (generally chlorin or phosgen). The gas is discharged from large numbers of big cylinders, generally at night or in the early morning when a steady, properly directed wind, of from 4 to 12 miles an hour, is blowing. The gas is heavier than air, sinks into trenches, dugouts and shell holes, and is unaffected by mist, rain or water courses. Such attacks have been made on a 5-mile front and have produced intoxication at points 6 miles behind the line.

2. Artillery shells. Shells containing gas in a liquid state, and lately also explosive charges to insure dissemination are used for distant ranges. With fifty or more guns firing ten shots a minute, often in salvos,

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[4] Wayson, N. E., and McCoy, G. W.: The Potency of Antipneumococcic Serum, The Journal A. M. A., June 8, 1918, pp. 1747-1749.

it is quite possible to drench thoroughly a given area with gas, especially if the ground is low or wooded. Such shelling is now much in vogue previous to an infantry attack, and is often directed against artillery positions.

3. Mortars (short range projectors, "minenwerfer"). By this method enormous gas shells can be projected for 2,000 yards. A large number of mortars are fired simultaneously, by an electric device, and thus a tremendous concentration of gas may be attained in a given locality, practically without warning. After such attacks, 40 per cent. of casualties with 15 per cent. of fatalities are not uncommon. When one reflects that an 8-inch shell contains 2½ gallons of volatile liquid, it is not difficult to understand why this should be so.

4. Hand grenades. Grenades containing lacrimatory, combustible or lethal gas are occasionally employed to "clean out" saps and dugouts.

The effects of gas depends on: (1) the kind used, and the concentration obtained; (2) the duration of the exposure, and (3) the promptness and efficiency of protective measures, such as gas alarms and respirators. It should be borne in mind that symptoms may be delayed, sometimes for hours, in certain types of gases.

THE DIFFERENT TYPES OF GASES

1. Lacrimators (acetone, xylene or benzene bromid). These gases act immediately, causing a copious ocular irritation, intense lacrimation and thus a temporary, indirect functional blindness. They are commonly employed in gas chambers for purposes of instruction, and to test out the "fit" of a mask.

2. Sternutators (diphenylchlorarsin). The symptoms produced by this type of gas are immediate sneezing, coughing, headache, salivation, vomiting and substernal pain. They are employed preliminary to or early in a gas attack so as to render gas mask protection difficult or impossible. A man who is seized with the above mentioned symptoms generally finds it impossible to get or keep his mask on, and hence falls a victim to the lethal gas that accompanies or follows the initial dose.

3. Lung irritants (suffocating gases—chlorin, phosgen, diphosgen, oxychlorcarbon). These gases produce death by irritation of the pulmonary alveoli, resulting in edema of the lungs.

4. Vesicants (dichlorethylsulphid, dichlormethylether). The brunt of the attack is borne by the skin, eyes and upper respiratory tract. Blistering and subsequent sloughing of the tissues affected results in cutaneous burns and intense bronchial, tracheal and laryngeal inflammation, and sloughing. Death results from bronchopneumonia.

5. Gases destroying erythrocytic function. (*a*) Carbon monoxid—causing death by asphyxia resulting from methemoglobinemia.

(*b*) Arsin—causing hemolysis, jaundice, hemoglobinemia, nephritis and gastro-intestinal disturbances.

SPECIAL TYPES OR VARIETIES OF GAS

Diphosgen (trimethylchloroforminate, "surpalite"), —This gas, now used instead of phosgen ("palite"), is the most intense lung irritant known. In a dilution of 1 : 50 (rare) one inhalation kills by laryngeal spasm. It diffuses quickly, and in a dilution of 1 : 1,000,000 is toxic if breathed for a considerable time. When brought into contact with water it forms hydrochloric acid. It produces but little local or early irritation, and during periods of excitement or when mixed with smoke, may be breathed for some time without discomfort. It does, however, cause slight, early, ocular smarting, nausea, retching and vomiting (pharyngeal irritation). Its chief and important action, however, is on the pulmonary alveoli, and its effect is pulmonary edema.

Symptoms: These are slight cough, nausea, substernal pain, soreness or sense of constriction, headache, epigastric pain, dyspnea, fever from 100 to 106, syncope and weakness.

Slightly gassed cases are difficult to diagnosticate. The symptoms may be slight and physical signs absent. It is safe to assume that a man who shows no physical signs at the end of from twenty-four to thirty-six hours either has not been gassed or, if so, only to a negligible degree.

The severe cases fall into one of two categories: (*a*) cyanotic cases: increasing restlessness, dyspnea, weakness and cough with slight frothy, sometimes blood-tinged, expectoration; dyspnea, cyanosis, venous distention and a full, strong pulse of about 100; or (*b*) gray cases: slight cough, no expectoration, ashen pallor, marked tachypnea, shallow respiration, a leaky skin, very low blood pressure, a rapid, thready pulse (140) and collapse. Needless to say, the prognosis in the latter case is far worse than in the former.

Physical Signs: In the early stages there may be no auscultatory signs—simply an increase of the respiratory rate and an increased fulness of the pulse. Later the signs of beginning pulmonary edema manifest themselves—crackling râles, harsh breath sounds, not infrequently together with pleural frictions. It is noteworthy and striking that such physical findings are first noted, most marked, and, during convalescence, most persistent, over the upper lobes anteriorly, and not, as is the case in disease, at the bases. Local tympany may be found, resulting from emphysematous areas. As the edema increases, resonance becomes impaired and breath sounds are lost, being totally replaced by crackling râles or completely silent areas. The heart dulness increases to the right, and as dilatation increases, the pulmonic second sound becomes enfeebled. Death results from deficient oxygenation due to cardiac dilatation, following pulmonary engorgement and edema. It is mechanical, therefore, there being no direct cardiotoxic effect. Occasionally symptoms and physical signs may be precipitated by physical exertion or a full meal, several hours after the exposure to gas, the patient collapsing quite suddenly.

Morbid Anatomy: The trachea and bronchi are filled with slightly blood-tinged froth. The lungs outwardly appear mottled as a result of alternating areas of congestion and emphysema. On section, congestion, capillary hemorrhages and extreme, widespread edema are found. Small, slightly bloody, pleural effusions are quite common. The right heart is dilated and often contains thrombi. The venous system is engorged, and thromboses are sometimes encountered. The kidneys are congested, and the glomeruli may contain clots.

Four fifths of all the deaths occur within the first twenty-four hours. If the patient can be tided over this interval he usually recovers. The pulmonary edema clears up rapidly after the second or third day. Cardiac dilatation may persist and be troublesome for several weeks.

Treatment: This consists of: (1) absolute rest; (2) warmth (to prevent shivering, which increases carbon dioxid); (3) venesection; (4) removal of clothing; (5) oxygen inhalations (in the cyanotic cases); (6) cardiac stimulation (camphor, digitalin, spartein, caffein), and (7) fresh air.

Venesection is the sheet anchor of treatment. About 500 c.c. of blood should be removed as soon as evidences of pulmonary edema begin to appear. This may have to be repeated within a few hours. The beneficial effects, both subjective and objective, are immediate and striking. A good-sized vein must be freely opened or a portion of its wall excised, since the blood is inspissated, clots quickly and flows with difficulty. Most observers believe that in cases belonging to the ashen gray type the patients should not be bled.

Contraindications in Treatment: Opium in any form, ipecac, emetin, expectorants or depressants, such as acetylsalicylic acid or other coal tar derivatives, are contraindicated. Opium tends to check cough, and hence the patient drowns in his own secretions sooner than he otherwise would.

Atropin produces no beneficial results; neither does epinephrin. It should be remembered that recovery may occur in the most desperate cases; active treatment should be kept up as long as the patient breathes. Raising the foot of the bed sometimes aids expectoration.

Practical Considerations: Gassed patients usually arrive in large numbers and tend to swamp the personnel of the field hospital; hence to save time and labor the following arrangements should be made:

1. Serious cases should be kept in one or two wards, and not scattered at random. Thus both observation and treatment will be facilitated.
2. One officer is detailed to see all incoming cases, to judge of their severity and order their disposition. He should circulate constantly through the wards so as to pick out cases with beginning edema.
3. One officer and one or two orderlies are assigned to perform venesection in the severe cases. More may be required.
4. One officer should supervise the oxygen administration and the giving of hypodermic stimulation. Oxygen is given for five or ten minutes, with ten or fifteen-minute intervals, according to the degree of cyanosis present.

All diphosgen patients must be transported by litter. They are not allowed to undress or bathe themselves. Light food in small quantities is allowed in the milder cases. In the severe cases the patients are kept at the field hospital for several days until acute symptoms have subsided. It the evacuation hospital it is usually possible at the end of a few days to pick out the patients who will soon be fit for duty from those requiring evacuation to the base. Convalescence will be more prolonged and must be more guarded than in the case of yperite ("mustard gas").

Chlorin.—The treatment of chlorin poisoning is similar in all respects to that of diphosgen, except that ammonia inhalations may be added.

Dichlorethylsulphid (yperite, "mustard gas").—This gas has a faint odor which has been compared to French-mustard, vinegar, etc. Characteristically, it produces no immediate or early effects. One may remain or sleep in a dugout charged with it for several hours before becoming conscious of its presence, and then it is often too late.

Occasionally nausea, retching, vomiting, and smarting of the eyes occur as valuable, even life-saving, symptoms at the end of from twenty to sixty minutes. As a rule, however, symptoms appear from two to five hours after the beginning of exposure.

The face and neck become red and the eyelids swollen. There is marked photophobia and blepharospasm, lacrimation, ocular and substernal and epigastric pain, pharyngitis, bronchitis, and an increased pulse and respiratory rate. At the end of twenty-four hours, severely gassed patients show in addition to an exaggeration of the symptoms just mentioned, cutaneous blistering of the face, neck, scrotum, inner surface of thighs, penis, buttocks, etc. Burns in the latter region are especially common after sitting on gas-impregnated earth. Widespread and severe purulent inflammation of all the upper mucosae and the bronchi are present. The expectoration consists of bloody pus and is sometimes accompanied by sloughs of the entire tracheal and bronchial mucous membrane.

At the end of forty-eight hours, bronchopneumonia, often widespread and coalescing, has occurred, as a result of tissue destruction and leukopenia. The patient is delirious, coughs, is cyanotic, exhausted, tortured by pain and suffocation, and finally lapses into unconsciousness. It is to be noted that in contrast to the phosgen cases, dyspnea, cyanosis, fever, tachycardia and prostration occur late. Practically none of the patients die within thirty-six hours, and death may occur weeks later. Slight transient albuminuria is quite common.

Convalescence: Photophobia of a functional type and unexplained origin persists for weeks and should be ignored as soon as local inflammatory changes have subsided. Bronchitis may also last for weeks, together with substernal and epigastric pain. None of these symptoms should prevent a man's being sent to the convalescent depot if his general physical condition warrants it. Some of the cases develop E. S. (effort syndrome), and require special treatment in "heart classes." Severely gassed patients—those that have developed a demonstrable bronchopneumonia—usually die. The slightly gassed patients usually recover. There is doubtless a middle class in which bronchiectasis develops in time as a result of cicatricial changes; but so far as is known, true tuberculosis as a sequel does not occur. It is, of course, easy to conceive that latent lesions may be activated by gassing.

Morbid Anatomy: There are purulent inflammation, destruction and sloughing of the respiratory mucosae. The lungs show alternating areas of congestion, emphysema and bronchopneumonia. The small bronchi and bronchioles are filled with pus. Sometimes coalescing areas of bronchopneumonia may produce extensive lobar involvement. Small areas of pulmonary edema may exist. The stomach, chiefly near the cardia, as well as the duodenum, generally contains submucous hemorrhages, conditions apparently resulting from the swallowing of saliva and responsible for the epigastric pain and gastro-intestinal symptoms. The kidneys are usually congested. Death results from bronchopneumonia and asphyxia due to obstruction of the smaller bronchi and bronchioles by mucosal sloughs and pus.

Treatment: 1. The patient should be evacuated early; as soon as possible, all clothes should be removed and the entire body washed with soap and water. (Yperite is freely soluble in animal and vegetable fats.) The hair, which retains the gas, should be clipped. The room must be well ventilated, the clothes thrown outdoors, and the attendants must wear gloves.

2. The eyes, nose and mouth should be douched with 1 per cent sodium bicarbonate solution. This should be followed by the instillation of a bland oil. If obtainable, 0.5 per cent. dichloramin-T dissolved in chlorcosane should be used for the eyes (1 drop in 3, each eye, thrice daily as suggested by Major J. E. Sweet). Dichloramin-T has a twofold purpose: (*a*) It is a chemical antidote, by virtue of its chlorin. (*b*) It is an antiseptic.

3. Skin burns are treated with any alkaline dusting powder (talc, magnesium carbonate, zinc oxid), or by oily dressings such as petrolatum or paraffin. They are not as painful as fire burns, presumably owing to the edema and degeneration of the nerve endings (Warthin and Weller). Blisters should be pricked, but their fluid should not be allowed to run over neighboring skin areas.

DIFFERENTIAL DIAGNOSIS AND TREATMENT

Yperite (mustard gas):	Diphosgen (also phosgen and chlorin):
Late symptoms; death from three to sixty days after exposure.	Early symptoms, death from one minute to forty-eight hours after exposure.
Skin burns, conjunctivitis, bronchitis, bronchopneumonia.	No skin burns nor conjunctivitis; dyspnea, cyanosis, edema of lungs.
Late fever, weakness, dyspnea and tachycardia.	Early fever, weakness and tachycardia.
Remove clothes, wash with *soap*, cut hair, treat eyes and skin burns.	Absolute rest, *venesection*, oxygen and cardiac stimulants.
Codein or morphin indicated for severe cough.	Codein and morphin contraindicated.
After-effects: photophobia, *bronchitis*, aphonia.	*After-effects:* weakness and cardiac dilatation.

4. Cough is treated with steam inhalations (benzoin), codein or morphin; and, unless the skin is already blistered, by counterirritation of the chest (mustard).

Eye shades should be provided, or light bandages applied. The latter must not prevent the free escape of discharges. Eye pain is relieved by forcing open the lids from time to time, and allowing the imprisoned secretions to escape. Cocain must not be used on account of its deleterious effect on the cornea. The ensuing purulent conjunctivitis, and occasional corneal ulceration, are treated by customary methods. The eyes rarely suffer permanent damage. Patients who have developed bronchopneumonia should be screened, to prevent, if possible, the infection of others. Oxygen inhalations are useful as a method of alleviation in severe cases, but they are not life saving as in the case of diphosgen, etc.

Clothing permeated with yperite if unaired remains poisonous for weeks. The gas can best be removed by passing the clothing through a steam sterilizer (thirty minutes wet steam, fifteen minutes dry steam, fifteen minutes air). If no sterilizer is available, they should be sunned and aired until they can be steamed.

Slightly gassed patients, of whom there are usually large numbers, may be allowed to walk to the shower baths and wash themselves. Physical exertion does not entail danger in any way comparable to that which exists after exposure to the phosgen group of gases.

Much diagnostic assistance may be gained by nonsuggestive questioning of the more intelligent and not too greatly prostrated patients. The patient should tell his own tale in regard to odors, irritation, nausea, vomiting, sneezing, cough or weakness. Early sneezing and headache point to sternutants or arsin; early cough, vomiting and weakness to phosgen; late conjunctivitis, nausea and cough, to yperite. Prognosis should never be discussed in the hearing of patients: psychoneuroses are too easily developed.

Ethyldichlorarsin.—This gas and others containing arsenic are now increasingly used. Lately a shell containing 50 per cent. dichlormethylether and 50 per cent. ethyldichlorarsin has been employed. Aside from early sneezing, it produces a condition practically identical with yperite except for the fact that its action is much more rapid. It is said that the arsenical gases, in addition to the other symptoms, produce somnolence, nephritis (edema of the hands and face), abdominal cramps, diarrhea and hemolytic jaundice. I have not as yet seen any such cases.

Carbon Monoxid.—This gas, which results from the combustion of high explosives, produces similar, though less intense, symptoms than the illuminating gas poisoning of civil life. Thus we find headache, asthenia, amnesia, delirium and syncope; symptoms which result from methemoglobinemia. Such cases are sometimes evacuated as "shock."

Treatment: This consists of rest, oxygen, stimulation and transfusion. Bleeding is, of course, contraindicated.

New and Nonofficial Remedies

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application. W. A. Puckner, Secretary.

ANTIRABIC VACCINE (See N. N. R., 1918, p. 324).

Dr. D. L. Harris' Laboratory, St. Louis (National Pathological Laboratories, Chicago).

Rabies Vaccine (Harris).—Brains and spinal cords of rabbits, dead of fixed virus rabies infection, are ground to a paste which is frozen in a container surrounded with carbon dioxide snow. The mass is pulverized and rapidly dried *in vacuo*. The resulting dry powder is standardized by the method devised by Dr. Harris, and stored *in vacuo* in the cold. One dose is given daily over a period of ten days or more, the early doses increasing in unitage up to a maximum. Each package contains vaccine and apparatus for the administration of one complete treatment, consisting of 10 tubes of rabies vaccine (Harris), sealed in a vacuum, and numbered consecutively; 10 vials containing sodium chloride solution for preparing the vaccine solution; and a Lüer syringe with needle.

Drug Cultivation in Madras.—According to U. S. Consul Lucien Memminger at Madras, India, experiments are being made in the cultivation of a number of drug plants on the Nilgiri plantations. Among them are jalap, ipecacuanha, belladonna, foxglove, henbane, common mint, fennel and rosemary, as well as lobelia inflata and chenopodium. Jalap has been raised for a number of years. On account of its high price during the war efforts have been made with some success to increase the production on the government cinchona plantations and in botanic gardens. It has been found that the plant can be propagated from cuttings from the young stems as well as from the tubers, which latter is the usual method. In Ootacamund an acre of jalap yields about 5,000 pounds of green tubers, or about 1,000 pounds of powder.

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SATURDAY, NOVEMBER 30, 1918

THE NONIDENTITY OF ANTINEURITIC AND ANTISCORBUTIC FACTORS IN NUTRITION

When the investigations that resulted in the demonstration that beriberi is truly a disease due to dietary deficiency established the vitamin hypothesis, an impetus was at once given to the consideration of other conditions of malnutrition from the same general standpoint. Before long, scurvy, rickets, pellagra and other maladies were put into the category of dietary deficiency diseases. As the polishings of rice had been clearly demonstrated to contain a substance—a vitamin—which will prevent the onset of beriberi or cure its symptoms when once they have made their appearance, a multiplicity of specific vitamins was at once postulated, each involved in a definite disease. In rickets, and particularly in scurvy, the probability that a dietetic factor is concerned has long been recognized; and in many instances improvement or cure has followed the institution of changes in the regimen of the patients. The specificity of the dietary deficiency diseases lent probability to the existence of specific deficiencies and consequently to the existence of a multiplicity of essential vitamins.

Meanwhile the need has been demonstrated of at least two types of vitamins in addition to the familiar nutrients, if physiologic well-being is to be attained. Investigations[1] are tending to demonstrate that certain properties of the water-soluble food accessory are similar to those associated with the so-called antineuritic vitamin which prevents the onset of beriberi and cures experimental polyneuritis. In fact, the suggestion has already been advanced that they are identical. Hence the question at once suggests itself as to whether the other alleged vitamins are identical, rather than specific—in other words, whether the belief in a diversity of nutrition-promoting substances should be abandoned.

For at least two of these vitamin-like factors in nutrition, the answer to this query is a negative one. It has long been known that many plants and fruit juices are capable of preventing and curing scurvy, that is, they contain an antiscorbutic substance. The information as to the chemical and physical properties of the latter has been exceedingly meager—far more so than in the case of the antineuritic vitamin studied by Funk and others.[2] A recent investigation[3] at the Lister Institute, London, has led Harden and Zilva to the definite conclusion that the antiscorbutic property is not identical with the antineuritic factor, since substances showing marked antineuritic activity are antiscorbutically inactive, and vice versa. There is also evidence that the antiscorbutic substance is more thermolabile than the antineuritic. The latest experiments show that, under certain conditions at least, the antineuritic substance behaves quite differently from the other toward adsorbents. If a mixture is made of autolyzed yeast—containing antineuritic vitamin—and orange juice, a recognized antiscorbutic, fullers' earth will remove the antineuritic factor while the other property remains unaltered. Common adsorbents like fullers' earth and colloidal ferric hydroxid do not appreciably affect the antiscorbutic potency of orange juice, which, furthermore, can even be filtered through porcelain without having its activity vitiated to any appreciable extent. The nonidentity of the curative agents for two diseases associated with faulty nutrition raises the question whether each malady is actually due to an avitaminosis or lack of suitable vitamin in the diet — a recently debated problem.

THYROID FUNCTIONS AND THERAPY

There can be little doubt that some, at least, of the so-called endocrine glands play an important part in metabolism. An attempt at present, however, to discover their precise function on the basis of dependable facts is more than likely to lead into a maze of conflicting hypotheses, some of which will not bear even superficial scrutiny. Endocrinology, to borrow a pretentious designation, still remains in good part a collection of guesses enriched and in some cases confused by clinical experiences. It will be imperative to prepare a far more substantial foundation for these new aspects of physiology and pathology before the therapy of the subject can be put on a rational basis. Lately several substantial contributions in the direction of progress have been made. Carefully conducted experiments on thyroidectomized animals in which precautions were taken to leave the parathyroid glands functionally intact have shown that, following the abolition of thyroid function, there ensues an unmistakable hypoglycemia and also a tendency to delayed removal of glucose from the blood, that is, a delayed blood sugar tolerance curve.[1] An explanation is thus afforded for the low blood sugar values observed in myxedema and cretinism. Since hypoglycemia has been reported in Addison's disease, pituitary disorders and other less clearly defined endocrine conditions, such as muscular dystrophy,[2] it has been suggested that this symptom is evidence of hypofunction of the endocrine glands, the thyroid being taken as an example.[3] It seems likely, therefore, that as the thyroid evidently functions to maintain the blood sugar at its normal level, there is a very intimate relation between the gland and carbohydrate metabolism.

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[1] McCollum, E. V., and Kennedy, C.: Jour. Biol. Chem., 1916, **24**, 491. Drummond, J. C.: Biochem. Jour., 1917, **11**, 255.

[2] Vitamins and Metabolism, editorial, The Journal A. M. A., Nov. 16, 1918, p. 1662.

[3] Harden, A., and Zilva, S. S.: The Differential Behavior of the Antineuritic and Antiscorbutic Factors Toward Adsorbents, Biochem. Jour., 1918, **12**, 93.

With respect to nitrogenous metabolism, it has long been known that administration of thyroid preparations may stimulate the disintegration of tissue. In an attempt to trace the specific effect thus recorded to definite metabolic factors, Janney and Isaacson[4] have studied the partition of nitrogen in the urine both in hypothyroidal conditions and after experimental hyperthyroidism. For the latter purpose Kendall's thyroid hormone was administered. No selective action of the thyroid on urea and ammonia could be observed; their percentages remained within normal limits. The creatinin metabolism also appeared to be independent of thyroid influence. The purin metabolism alone seemed to be altered, the output being decreased in hypothyroid function and increased in hyperthyroid conditions. In a special series of investigations at the Montefiore Home and Hospital, New York,[5] it was found that the nitrogen balance is a rather delicate measure of the action of thyroid products. Contrary to widely held assumptions, a gain rather than a loss of nitrogen is a result of the therapeutic action of the thyroid; whereas a loss of nitrogen, that is, of protein, is due to the toxic action of the gland.

If it proves to be correct that nitrogen loss following thyroid medication is a toxic manifestation —a sign of overdosage or hyperthyroidism—a fact of unique importance will have been acquired. Janney fortifies his belief by reminding us that abolition of thyroid function in the very young leads to stunted growth (cretinism). Proper thyroid medication causes growth to be resumed. The therapeutic action of the thyroid should therefore be found to be accompanied by a gain, not a loss, of nitrogen. Accordingly, small doses of thyroid which suffice to cause clinical improvement in a cretin have actually been attended by an increased retention of nitrogen in the body. According to Janney's interpretation, the depressed nitrogen excretion in cretinism is not due to "absence of stimulatory effect," but rather to the failure of normal repair and growth processes controlled by the thyroid. As these constructive processes are inhibited, little food is taken, because more cannot be assimilated. A low nitrogen output results.

That the metabolism is depressed in cretinism has long been recognized. Janney's studies indicate that this cannot be due to decreased alimentary absorption of food attributable to intestinal sluggishness. The adiposity sometimes observed may be due to the altered assimilability of sugar, since disturbances of carbohydrate metabolism have now been demonstrated to attend hypothyroid conditions. With these newer points of view, the problems of therapy and dosage can be considered to better advantage.

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[1] Janney, N. W., and Isaacson. V. I.: The Blood Sugar in Thyroid and Other Endocrine Diseases: The Significance of Hypoglycemia and the Delayed Blood Sugar Curve, Arch. Int. Med., August, 1918. p. 160.

[2] The Origin of Progressive Muscular Dystrophy, editorial, The Journal A. M. A., May 11, 1918, p. 1376.

[3] Hamman, Louis, and Hirschman, I. I.: Studies on Blood Sugar, Arch. Int. Med., November, 1917, p. 761.

[4] Janney, N. W., and Isaacson, V. I.: The Influence of Thyroidectomy and Thyroid Diseases on Protein Metabolites, Arch. Int. Med., August, 1918, p. 174.

[5] Janney, N. W.: Studies in Thyroid Therapy: The Effects of the Thyroid Hormone as Determined by a Clinical, Metabolic and Dietetic Investigation: New Points of View on Thyroid Function in Health and Disease, Arch. Int. Med., August, 1918, p. 187.

THE ILLINOIS EXPERIMENT IN REGULATING MEDICAL PRACTICE

Seventeen months have elapsed since the new arrangement became effective for regulating the practice of medicine in Illinois under the Consolidation Law. As already outlined in The Journal,[1] the registration of physicians, together with the licensing of dentists, pharmacists, midwives, followers of various cults and other registrable occupations, were together placed in a single department headed by an official who had authority to select advisers in the registration of each of the professions and occupations concerned. This arrangement in Illinois is an experiment, since it has no parallel in the methods adopted in other states. The arrangement places in a single department the control of all forms of healing, and the director of the department is in position to require, without discrimination, reasonable educational qualifications of all who are to practice regardless of the "system" or method of treatment employed. The success of any law depends, of course, on the ability and integrity of those appointed to enforce it. That the new law in Illinois is in proper hands is evident from the energetic prosecution of medical crooks and illegal practitioners since July 1, 1917, and in the establishing of better conditions in medical schools. The article by Mr. Francis W. Shepardson, director of the Department of Registration and Education of the State of Illinois, which was published two weeks ago,[2] therefore deserves careful reading. Mr. Shepardson and his co-workers entered on their duties with little or no knowledge of the irregularities of quacks, crooks and charlatans, who have always preyed on the sick and the injured. These irregularities, however, have been and are well known to the better class of physicians, who from time immemorial have struggled to uphold the dignity and honor of the medical profession—although Mr. Shepardson in his article apparently has not appreciated this fact. The article is written with the vividness usual to a layman who has suddenly had his eyes opened to the seriousness of the conditions disclosed. As he states:

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[1] The Illinois Consolidation Bill Becomes a Law, The Journal A. M. A., March 17, 1917, p. 869.

[2] Shepardson, F. W.: A Registration Fee for Physicians, The Journal A. M. A., Nov. 16, 1918, p. 1629.

> They found an army of advertising charlatans, some with fixed offices and others appearing "for one day only," making extravagant claims of curative skill in handling all diseases, specialists in everything, blatant fakers, robbing the poor and the ignorant, preying on the superstitions of gullible foreigners, as bold and daring bandits as ever sandbagged a lone wayfarer at night.

The irregularities found, however, were not only of those who because they hold degrees in medicine are physicians, but who prefer to resort to quackery; the description includes, also, the hordes of those representing the endless variety of cults, fads and isms, who skulk in the shadow of the medical profession, but who excuse their failure to secure the educational qualifications required of physicians by the claim that they are "not practicing medicine." As Mr. Shepardson further states:

> They found a motley array of so-called "doctors" of every name and cult under the sun: regulars, homeopaths, eclectics, osteopaths, chiropractors, naprapaths, spondylotherapaths, mechanotherapaths, suggestive therapaths, psycotherapaths, naturotherapaths, iridologists, magnetic healers, religious healers, and many other varieties, the list forcibly reminding one of the description which Masson gives in his "Life of Milton" of the sects which flourished in England in the poet's time. After naming a great many, he includes in a sweeping classification the remainder of the some hundred-odd varieties of "fluent, rancorous, inquisitorial and on the whole nasty kinds of Christians."

This article is especially interesting because it turns the strong light of publicity on the quacks, cultists and pretenders who for ages have thrown discredit on the practice of medicine. It is well known to medical men that the conditions disclosed in Illinois are not limited to that state. A similar investigation would show affairs equally as bad or worse in other states. Only a few states have provided for regulating all forms of the practice of the healing art by a single department. On the other hand, as previously shown in The Journal,[3] the authority over the various forms of healing has been divided in several states (Arkansas, for example) among as many as six different and independent boards—a situation which allows faddists, quacks, medical crooks and charlatans to prey at will on the credulity of people who are rendered still more unwary in times of worry, sickness and distress. Mr. Shepardson's disclosures tend to show what is the next great reform movement needed in this country, namely, the conducting of a thorough investigation by a disinterested but competent committee of educators of the conditions underlying the practice of medicine in the United States, similar to that conducted by Mr. Justice Hodgins in Ontario two years ago. All the publicity possible should be given to the conditions found. The medical profession as a whole has nothing to fear from it and would undoubtedly favor such a house cleaning. It is only the quacks, crooks and fakers who prefer to skulk in the darkness and who, like rats, will try to hide when the light is turned on. The medical profession has striven for years to clear out these offenders, but the public has either remained indifferent or has unknowingly sided with the pretenders. The efforts of the profession have frequently been misinterpreted as being made in its own interests, and the cultists and quacks have claimed that they were being "persecuted by the medical trust," etc. It is evident, therefore, that the most effective investigation would be by an educational agency representing the public and independent of the medical profession. It is clear also that in each state the licensing of those who are to treat the sick should be in charge of a single board of disinterested but competent lay educators who, as in Illinois, are authorized to select an advisory board of physicians to aid in enforcing the practice laws. Finally, such educational qualifications should be required as will insure that those licensed shall have a knowledge of the normal functions of the human body and their reactions to injury and disease.

DOES BEER CONTAIN VITAMINS?

In the final appeals of the advocates of beer for a hearing in defense of their claims, considerable emphasis has been given to the nutrient properties of the brewed malt beverages. As cereals form the basis for the production of beer, the advertising specialist has hit on the clever device of calling this fluid "liquid bread." No cogent reason is given, however, why one should depart from the time honored custom of consuming bread prepared in the more substantial form of a nonalcoholic loaf.

The discovery that the dietetic value of a food product cannot be determined solely by reference to its calorific value or its content of long recognized nutrients has introduced new criteria into the study of nutrition. With the recognition of "quality" distinctions in proteins and the existence of vitamins has come the need of investigation from new and more numerous standards. It has become evident that articles intended for the dietary should be examined and evaluated not only for the usual ingredients, but also for the accessory factors which may add to their dietary significance.

The beer enthusiasts have been quick to grasp the situation. Barley[1] and yeast, both of which are involved in the manufacture of beer, are recognized sources of nutrition-promoting vitamin. It is true that the barley is germinated and heated to produce malt prior to the brewing process. The conjecture that vitamins may be present in beer is therefore not an unreasonable one. However, the popular alcoholic beverage is meeting its Waterloo on all sides. An investigation made by Harden and Zilva[2] to test the subject by the physiologic methods now available has given a clear-cut answer. Their conclusion is that bottled ale and stout, and fined beer as brought to the market, are lacking both in the antineuritic and antiscorbutic accessory factors, and kilned malt is also wanting in these two principles. It is an interesting commentary on the alcoholic aspects of the subject that in testing for the antineuritic factor by attempting to cure polyneuritic pigeons it was necessary to remove the alcohol from the beer, lest this component might induce the very disease which the postulated beer vitamin was expected to relieve or avert.

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[3] Medical Licensure in the United States, Current Comment, The Journal A. M. A., Nov. 4, 1916, p. 1377.

[1] Steenbock, H.; Kent, Hazel E., and Gross, E. G.: The Dietary Qualities of Barley, Jour. Biol. Chem., 1918, 35, 61. Barley as a War Time Substitute for Wheat, editorial, The Journal A. M. A., Sept. 7, 1918, p. 828.

The truth is the same today as it has been for decades. Beer is not chiefly appreciated on account of the nutritious value of its ingredients, nor on account of the by-products of the brewing industry which may help to produce milk and meat. Beer and alcohol still go together; and the claims of alcohol for respectful consideration have been duly considered and found wanting.

Current Comment

THE ANTIQUITY OF DISEASE

The development of a new subdivision of science, paleopathology, which aims to interpret the pathologic conditions discovered among the fossil remains of ancient geologic times, is likely to throw new light on the antiquity of disease. Existing evidences already relegate its beginnings back as far as the carboniferous or great coal period. We may be certain, particularly as the result of the investigations of French scientists, that fungi and bacteria existed in this early period, although the presence of such micro-organisms does not constitute a convincing proof of their pathogenicity. According to Moodie,[3] who has reviewed much of the work in this field of study, the great Permian period, with its widespread development of curious reptilian forms, has furnished us with the first evidences of traumatic conditions as they prevailed among the early forms of life. Fractures may have occurred earlier than the Permian, but they have not yet been seen. Some of the uncovered fossil vertebrates have been described as exhibiting opisthotonos or spastic distress.[4] In other instances, necrosis of the bones has been postulated. Even such specific lesions as are represented by hemangiomas have been detected by microscopic study of the fossil remains of the great dinosaurs. Osteomas and other osseous defects are also known to have occurred. Dental caries is certainly not a novelty of modern ages. Moodie points out that no new ideas of pathology have beeen revealed by the study of the ancient lesions; but, he adds further, none were to be expected, since the organization of the animal forms of ancient times presumably differed only in minor details from the structures of the present geologic age. The presence of lesions suggests definite causes for their origin. Whether they represent extinct diseases or still existent etiologic factors remains to be ascertained as part of the development of the newly formulated science.

INDUSTRIAL MEDICINE IN THE PLACEMENT OF RETURNED SOLDIERS

As America entered the war, industry faced the tremendous problem of releasing millions of workmen, and, at the same time, maintaining or increasing production. Now that the war is over, it faces the no less difficult problem of assimilating the returned and disabled soldiers without seriously affecting production and labor conditions. Wisdom calls for the safe and efficient utilization of all workers, and it should guide the redistribution in industry of our returned soldiers. Most employers will welcome back those who left their jobs to enter the Army or Navy. Patriotism, fairness, generosity or whatever be the motive, the fact remains that scientific placement of these returned soldiers will be a wiser policy than their indiscriminate employment even in the industries from which they came. Eventually, the returned soldier, be he physically fit or physically disabled, will have to compete with his fellows for employment and wages on the basis of efficiency. Industry will be forced to use these men as it will have to use all workers—where they can be most productive. The returned soldiers in the aggregate will come back in better physical condition than when they left employment. Many of them will know what physical defects they possess and something of their significance. They will know that they can adapt themselves to new conditions of life and work. It will be for the good of all if industry, in reassimilating these men, capitalizes these changed conditions of body and mind by placement in the light of physical qualifications. Herein lies a great opportunity for the industrial physician and surgeon. He can carry over into the solution of a national problem his skill and experience in the human maintenance department of modern industry. As a physician he can take stock of a man's physical assets in relation to the work he can perform and, in cooperation with efficient employment managers, can place that man in his most advantageous occupation. But not all of our soldiers and sailors will come back physically fit. Some will return with physical capital much depleted. Some have been crippled or maimed or blinded. Some have been disabled by less apparent but no less serious injuries, such as shell shock and other war neuroses, disease, strain, exposure and other incidents of modern warfare. For these the government is making adequate provision for medical and surgical treatment, convalescent care, occupational therapy, vocational education and for placement in gainful employment. In carrying out this program, industrial physicians and surgeons have been given an important place. As these reconstructed men return to civilian life to become self-supporting members of society rather than pensioners, the industrial physician, by the nature of his calling, will be the wisest guide in their placement in industry and in the maintenance of their productive ability.

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[2] Harden, A., and Zilva, S. S.: An Investigation of Beer for Antineuritic and Antiscorbutic Potency, Jour. Institute of Brewing, 1918, **24**, 197.

[3] Moodie, R. L.: Studies in Paleopathology, I, General Considerations of the Pathological Conditions Found Among Fossil Animals, Ann. Med. History, 1918, **1**, No. 4; Paleontological Evidences of the Antiquity of Disease, Scient. Month., 1918, **7**, 265.

[4] Moodie, R. L.: Studies in Paleopathology, III, Opisthotonos and Allied Phenomena Among Fossil Vertebrates, Am. Naturalist, 1918, **51**, No. 617.

TERMINAL INFECTIONS

The reactions by which the organism defends itself against bacteria are by no means simple in nature. Despite the almost limitless opportunities for the introduction of the micro-organisms, they rarely reach the blood stream. This is due in part to mechanisms that prevent their passage through the exterior of the body, or devices that destroy them within the alimentary path. It is further due, however, to factors of immunity which are chemical in nature. Whenever bodily resistance of this sort is referred to we think of the so-called immunity reactions. Bacteriolysins, agglutinins, precipitins and opsonins play a prominent part in determining whether bacteria can be present or multiply in the blood. It is commonly believed that prior to death from other than very acute or accidental causes the natural defenses of the body may fail to a large extent. If this is true we may expect that invasion of the blood stream will be frequent, and consequently true terminal infections may be added to those already present as a primary cause of disease. The question here involved is capable of at least partial solution by actual examination of the blood—by investigation of bacteremias in the agonal period. This aspect of the bacterial invasion of the blood stream has been considered recently at the Magee Pathological Laboratories of the Mercy Hospital in Pittsburgh by Richey and Goehring,[1] who tried to determine the frequency of the presence of bacteria in the peripheral vessels immediately after death. This anatomic location was selected in preference to the heart as a source of the blood because of the relatively great postmortem invasion of the heart's blood from surrounding structures. Out of more than 200 cases, about one third gave positive cultures. The value of the method was fortified by the fact that when antemortem cultures were taken, the results were usually the same as those obtained by immediate postmortem examination through the median basilic or cephalic vein. In the acute traumatic deaths only one positive culture was obtained out of thirty-six examinations. This was in striking contrast to the thirty-six positive results out of fifty-five trials in the case of chronic debilitating diseases. Cocci appeared to be the commonest invaders of the blood stream, the representative of the streptococcus-pneumococcus group being most conspicuous. Pneumococci were isolated immediately after death in 50 per cent. of the cases diagnosed clinically as pneumonia. There can no longer be any doubt that true terminal infections frequently occur under the conditions of lowered resistance. Judging from the character of the organisms isolated, the main foci are probably in the intestine, the pulmonary alveoli, the upper respiratory passages, and other mucous membranes.

THE BACTERIA ON VEGETABLES

In the earlier days of modern bacteriologic technic there was developed a sort of semipopular scientific sport which might not inaptly have been termed "microbe hunting." Air, food and water, books and bankbills, toys and toggery were examined for evidences of bacteria. Danger seemed to lurk in everything that was acceptable to mankind, until the realization came that not all bacteria are baneful, and that some may even be beneficent. Thus it became the duty of the bacteriologist to identify our microbial enemies and direct his hygienic warfare more specifically against them. There are other lessons, too, that progress has taught. The unsuspected carrier has been brought into the limelight. In the dairy industry the importance of the cleanliness of the utensils used and of the personnel has become emphasized along with the necessity of keeping the milk-producing animal free from objectionable germs. Lately considerable has been said about the significance of sanitary conditions of food shops for the public health. In this connection a recent bacterial examination of green vegetables sold in Chicago stores is not without interest. At the University of Chicago, Kurk[1] attempted to discover whether the general sanitary condition of the store at which the purchase was made had any influence on the bacterial contents. *Bacillus coli* was found on twenty-two out of twenty-nine samples of the vegetables. It was present in ten out of twelve samples from stores classified as clean; in six out of ten samples from stores classed as fair, in five out of six from dirty stores and in watercress from a free lunch counter. Streptococci were found on three samples, two being from clean stores. Thus there was no indication that the general sanitary conditions of the store influenced the bacterial count. A clean shop is not a guarantee of hygienic safety; for food, like man, may be a carrier.

"SCIENTIFIC" NOMENCLATURE

A member of the Association's chemical laboratory, who is in the service, writes from a well-known eastern institution deploring the use of proprietary names around the laboratory there. He writes:

> In bacteriology we disinfect our hands with a solution labeled, "Lysol." I asked one of the instructors why they didn't use Liquor Cresolis Compositus. He replied that that actually was the substance in the bottle, but that it was labeled "Lysol" so the doctors would know what they wanted!

Comment on this would be gilding refined gold, and painting the lily.

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[1] Richey, D. G., and Goehring, C.: Sudies on Bacteremias in the Agonal Period, Jour. Med. Research, 1918, **38**, 421.

[1] Kurk, F. W.: A Bacterial Examination of Green Vegetables, Am. Jour. Pub. Health, 1918, **8**, 660.

Medical Mobilization and the War

Personnel of the Medical Department

On November 22 the total commissioned personnel of the Medical Corps was 31,158, a decrease of 240 from the previous week, consisting of 3 major-generals, 7 brigadier-generals, 187 colonels, 431 lieutenant-colonels, 2,338 majors, 9,807 captains and 18,385 first lieutenants. The total number in active service was 30,339, a decrease from the previous week of 252. To date 2,791 officers have been discharged for the following causes: physical disability, 1,006; inaptitude, 333; other branches of service, 727; resignations, 305; domestic troubles, 64; needed by community, 50; deaths, 261; dismissals, 24; duty completed, 3; no reasons given, 18.

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Alabama

To Camp Custer, Mich., base hospital, for instruction, from Fort Oglethorpe, Major M. MASON, Birmingham.

To Camp Jackson, S. C., base hospital, for instruction, from Fort Oglethorpe, Capt. D. G. CAMPBELL, Mobile.

To Camp Sheridan, Ala., base hospital, from Fort Oglethorpe, Lieut. W. L. SHACKLEFORD, Gordo.

To Canal Zone, from Washington, Major G. H. S. SEARCY, Tuscaloosa.

To Cape May, N. J., base hospital, from Fort Sill, Lieut. C. H. DRAKE, Birmingham.

To Charleston, S. C., from Camp Beauregard, Capt. S. G. GAY, Selma.

To Fort Oglethorpe, evacuation hospital, from Camp Joseph E. Johnston, Lieut. J. R. CHISOLM, Marion Junction.

To Omaha, Neb., Creighton University, from Lincoln, Lieut. R. CALLEN, Birmingham.

To Port Clinton, Ohio, from Atlanta, Major W. C. DABNEY, Birmingham.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Meade, Md.*, base hospital, from Fort Oglethorpe, Capt. J. H. ASHCRAFT, Fayette. On completion *to Camp Upton, N. Y.*, base hospital, from Fort Oglethorpe, Capt. F. P. PETTEY, Albany.

To St. Paul, Minn., Overland Bldg., from Fort Wayne, Mich., Capt. A. P. WEBB, Atmore.

Alaska

To Camp Meade, Md., base hospital, from Fort Oglethorpe, Capt. W. T. H. PALLISTER, Juneau.

Arizona

To Camp Sheridan, Ala., base hospital, from Fort Oglethorpe, Lieut. E. B. THOMPSON, Benson.

To Cape May, N. J., base hospital, from Walter Reed General Hospital, Capt. C. A. THOMAS, Tucson.

Arkansas

To Camp Colt, Pa., from Camp Custer, Lieut. W. M. MAJORS, Walcott.

To Camp Jackson, S. C., from Camp Custer, Lieut. W. M. MATTHEWS, Crossett.

To Camp Knox, Ky., from Fort Oglethorpe, Lieut. A. C. KOLB, Hope.

To Carlisle, Pa., from Plattsburg Barracks, Lieut. J. B. HESTERLY, Prescott.

To Cincinnati, Ohio, University of Cincinnati, from Camp Custer, Lieut. E. BAKER, Dermott.

To Fort Snelling, Minn., from Jefferson Barracks, Major W. K. READ, Texarkana.

California

To Army Medical School for instruction, from New Cumberland, Pa., Lieut. R. W. WILCOX, San Francisco.

To Boston, Mass., from Camp Custer, Capts. J. E. CLARK, Oakland; E. A. JONES, Taft.

To Camp Cody, N. M., base hospital, from Camp Kearney, Major H. C. LOOS, San Diego.

To Camp Crane, Pa., from Camp Kearney, Capt. E. H. THOMPSON, Burbank. Base hospital, from Fort Douglas, Capt. W. B. DEAS; from Camp Fremont, Capt. R. PATEK, San Francisco; from New York, Lieut. F. H. TAYLOR, San Diego. Evacuation hospital, from San Francisco, Capt. C. A. BELL, Santa Barbara. Mobile hospital, from Camp Kearney, Lieut. J. H. NORMAN, Allegheny. Surgical group, from Camp Kearney, Capt. J. C. ROBERTSON, Modesto.

To Camp Custer, Mich., base hospital, for instruction, from Fort Oglethorpe, Capt. H. L. PARISH, Oakland.

To Camp Jackson, S. C., from Camp Custer, Lieut. W. F. KELLER, Long Beach.

To Camp Kearney, Calif., Capt. C. H. WILDER, Oakland.

To Camp Kendrick, N. J., from Fort Sill, Lieut. G. F. HARRIS, San Diego.

To Camp Lewis, Wash., as orthopedic surgeon, from San Francisco, Capt. N. T. ENLOE, Chico; Lieut. D. R. WILSON, San Jose.

To Camp Sevier, S. C., as tuberculosis examiner, from New Haven, Major R. L. BYRNES, Los Angeles. Base hospital, from Fort McDowell, Col. P. C. FAUNTLEROY.

To Camp Shelby, Miss., base hospital, from Camp Fremont, Capt. T. R. McNAB, Los Angeles; from Camp Pike, Capt. G. J. BERGENER, San Francisco.

To Camp Upton, N. Y., base hospital, from Camp Wheeler, Lieut. H. D. WILLIAMS, San Francisco; from Fort Oglethorpe, Capt. J. C. COPELAND, Los Angeles.

To Camp Wheeler, Ga., base hospital, from Camp Kearney, Lieut. G. H. BOYD, Los Angeles; from Fort Oglethorpe, Capt. J. G. HAM, San Bernardino.

To Cape May, N. J., base hospital, from Camp Grant, Capt. C. A. JOHNSON, Los Angeles; from Rock Island Arsenal, Capt. F. F. SPRAGUE, Los Banos.

To Fort McHenry, Md., from Ann Arbor, Capt. B. P. STOOKEY, Los Angeles.

To Fort Sheridan, Ill., base hospital, from Camp Cody, Capt. W. H. SMITH, Los Angeles; from Camp Lewis, Capt. R. CADWALLADER, San Francisco.

To Mineola, N. Y., Hazelhurst Field, for instruction, from Fort Riley, Capt. V. D. BROWN, San Francisco.

To report to the commanding general, Southeastern Department, from North Charleston, Lieut. A. E. DICKINSON, San Jose.

To San Francisco, Calif., Leland Stanford University, for instruction, from Letterman General Hospital, Capts. W. C. BAKER, San Mateo; E. L. COTTRELL, Scotia; Lieut. L. DOZIER, Stockton. Letterman General Hospital, Major L. ELOESSER, San Francisco.

The following order has been revoked: *To Camp Crane, Pa.*, from San Francisco, Major A. C. CARLTON, San Mateo.

Canal Zone

To Camp Crane, Pa., mobile hospital, from New Haven, Lieut. D. J. MURPHY, Corozal.

To Fort Oglethorpe, evacuation hospital, from Camp Shelby, Lieut. L. M. DRENNAN, Ancon.

Colorado

To Azalea, N. C., from Markleton, Pa., Major P. A. LOOMIS, Colorado Springs.

To Camp Greene, N. C., base hospital, from Camp Logan, Major J. H. BROWN, Colorado Springs.

To Camp Knox, Ky., from Fort Oglethorpe, Lieut. P. C. GEISSLER, Colorado Springs.

To Camp Lee, Va., base hospital, from Fort Riley, Lieut. R. L. CHARLES, Denver.

To Camp Logan, Texas, base hospital, from Camp Shelby, Capt. T. A. STODDARD, Pueblo.

To Camp Sheridan, Montgomery, Ala., from Cedar Falls, Capt. J. A. DUNWODY, Cripple Creek.

To Camp Wadsworth, S. C., base hospital, from Fort Riley, Lieut. K. F. ROEHRIG, Denver.

To Fort Oglethorpe, evacuation hospital, from Camp Cody, Major H. S. FINNEY, Denver.

To Fort Sheridan, Ill., base hospital, from Fort Riley, Lieut. A. R. WILLIAMSON, Pueblo.

To Newport News, Va., from Rockefeller Institute, Capt. E. G. GRIFFIN, Denver.

To Urbana, Ill., University of Illinois, Lieut.-Col. C. N. BARNEY, Denver.

To Washington, D. C., from Fort Oglethorpe, Lieut. P. B. WALLACE, Eagle.

Connecticut

To Camp Abraham Eustis, Va., base hospital, from New Haven, Lieut. H. W. BRAYTON, Hartford.

To Camp Sevier, S. C., base hospital, from Camp Gordon, Capt. R. W. LOWE, Ridgefield.

To Camp Shelby, Miss., base hospital, from Fort Oglethorpe, Capt. F. F. SIMONTON, Thompsonville.

District of Columbia

To Camp Bowie, Texas, as division surgeon, Lieut.-Col. H. B. McINTYRE.

To Camp Crane, Pa., base hospital, from Lakewood, N. J., Lieut. F. D. ADAMS, Washington. Surgical group, from Walter Reed General Hospital, Lieut.-Col. F. B. LUND.

To Camp Devens, Mass., base hospital, from Fort Oglethorpe, Capt. P. E. LARKIN, Washington.

To Camp McClellan, Ala., as division surgeon, Lieut.-Col. A. W. SCHOENLEBER.

[illegible] from Walter Reed General Hospital, Lieut. H. F. [illegible]

[illegible] from Western Department, Lieut.-Col. W. P. BANTA.

Florida

To Army Medical School for instruction, from Newport News, Major J. W. ALSOBROOK, Plant City.

To Camp Crane, Pa., base hospital, from Fort Oglethorpe, Capt. D. FORSTER, Hawks Park; from Lakewood, N. J., Lieut. A. J. WOOD, St. Petersburg.

To Camp Sheridan, Ala., base hospital, from Camp Shelby, Capt. G. R. HOLDEN, Jacksonville.

To Charleston, S. C., from Camp Lee, Major G. R. PLUMMER, Key West.

To Fort Ethan Allen, Vt., base hospital, from Camp Devens, Capt. L. A. PEEK, West Palm Beach.

Georgia

To Atlanta, Ga., Morehouse College, and Atlanta University, from duty as a private, Lieut. R. B. FOSTER, Athens.

To Camp Colt, Pa., from Camp Upton, Lieut. C. A. WITMER, Waycross.

To Camp Crane, Pa., evacuation hospital, from Camp Jackson, Capt. W. B. CRAWFORD, Savannah.

To Camp Gordon, Ga., from Walter Reed General Hospital, Lieut. C. REED, Babcock.

To Camp Sherman, Ohio, sanitary train, from Fort Oglethorpe, Lieut.-Col. J. L. ROBINSON.

To Camp Wadsworth, S. C., base hospital, from Fort Oglethorpe, Lieut. J. G. DEVANE, Adel.

To San Antonio, Texas, Kelly Field, from Americus, Ga., Lieut. J. M. J. LIKE, Fitzgerald.

To White Plains, N. Y., for instruction, from Fort McPherson, Capt. G. P. HUGULEY, Atlanta.

Idaho

To Washington, D. C., for instruction, from Jefferson Barracks, Capt. R. E. MASON, Mackay.

Illinois

To Ann Arbor, Mich., University of Michigan, for instruction, from New York, Capt. O. T. ROBERG, Chicago.

To Austin, Texas, Texas State University, from Indianapolis, Major O. A. SUTTLE, Mount Vernon.

To Biltmore, N. C., from Camp Crane, Lieut. H. E. LUTYENS, Farmingdale.

To Boston, Mass., from Camp Custer, Lieut. H. D. EATON, Harvard.

To Camp Crane, Pa., evacuation hospital, from Camp Grant, Lieut. P. F. SNYDER, Chicago; from New York, Capt. H. A. BEAM, Moline. Mobile hospital, from New Haven, Lieut. P. B. RABENNECK, Nashville.

To Camp Custer, Mich., base hospital, for instruction, Capts. P. M. OLIVER, W. J. SWIFT, Chicago.

To Camp Forrest, Ga., to examine drafted men for nervous and mental diseases, from Fort Oglethorpe, Capt. I. J. FRISCH, Chicago.

To Camp Greene, N. C., from Fort Oglethorpe, Lieut. S. E. LYNCH, Chicago. Base hospital, from Camp Hancock, Lieut. E. H. SEIFERT, Chicago.

To Camp Hancock, Ga., base hospital, for instruction, from Fort Oglethorpe, Lieut. E. ZIMMERMAN, Quincy.

To Camp Jackson, S. C., from Camp Custer, Lieuts. J. J. LEACH, P. P. O'CONNOR, Chicago; J. R. BIERLY, Springfield.

To Camp Joseph E. Johnston, Fla., base hospital, for instruction, from Fort Oglethorpe, Capt. L. A. BEATON, Chicago; Lieut. E. AUSTIN, Benton.

To Camp Kendrick, N. J., from Camp Colt, Lieut. R. M. MONTFORT, Danville.

To Camp Logan, Texas, base hospital, from Fort Oglethorpe, Capt. T. H. PAGE, Peoria. Base hospital, for instruction, from Fort Oglethorpe, Lieut. H. H. FLETCHER, Winchester. *To examine drafted men* and on completion *to base hospital*, from Fort Oglethorpe, Capt. F. W. JONES, Alton.

To Camp MacArthur, Texas, base hospital, from Fort Oglethorpe, Lieut. G. T. MEACHAM, Taylorville.

To Camp McClellan, Ala., base hospital, from Camp Beauregard, Major T. O. WARD, Mount Vernon; from Fort Oglethorpe, Capt. J. K. RETICKER, Quincy.

To Camp Sevier, S. C., base hospital, from Fort Oglethorpe, Capt. L. A. BURHANS, Peoria.

To Camp Shelby, Miss., base hospital, from Camp Gordon, Capt. H. L. THOMPSON, Harrisburg.

To Camp Sheridan, Ala., from Fort Oglethorpe; Lieuts. G. W. WESTERMEIER, Carlinville; G. E. KNAPPENBERGER, Macomb. Base hospital, from Fort Oglethorpe, Capt. H. G. WRIGHT, DeKalb; Lieut. W. G. McCANDLESS, Sterling.

To Camp Travis, Texas, base hospital, for instruction, Lieut. G. HALPERIN, Chicago.

To Camp Upton, N. Y., base hospital, from Camp Sherman, Lieut. L. B. SHORT, East St. Louis; from Fort Oglethorpe, Capt. H. JACKSON, Chicago; Lieut. W. I. GREEN, Sumner.

To Camp Wadsworth, S. C., base hospital, from Fort Oglethorpe, Lieuts. W. H. MILLER, Chicago; C. L. CAREY, Marion.

To Camp Wheeler, Ga., as assistant to division surgeon, from Camp McClellan, Lieut. G. F. RENDLEMAN, Anna.

To Cape May, N. J., base hospital, from Camp Custer, Capt. D. N. EISENDRATH, Chicago; from Camp Hancock, Lieut. E. L. CAVENEE, Champaign; from Camp Meade, Lieut. A. J. LINOWIECKI, Chicago; from Fort Sill, Lieut. E. A. SCHLAGETER, Chicago.

To Dansville, N. Y., from Syracuse, Capt. A. E. MOWRY, Chicago.

To Eastern Department, from Camp Upton, Capt. J. A. KLEINSMID, Aledo.

To Fort Bayord, N. M., from Denver, Capt. H. C. MILLER, Chicago.

To Fort Benjamin Harrison, Ind., base hospital, from Jefferson Barracks, Major J. W. TURNER, Pleasant Hill.

To Fort Oglethorpe, evacuation hospital, from Camp Cody, Capt. H. A. MILLARD, Minonk; from Camp Zachary Taylor, Capt. R. T. VAUGHAN, Chicago. For instruction, Lieut. M. V. ROBINSON, Chicago; from Camp Forrest, Capt. I. J. FRISCH, Chicago.

To Fort Sam Houston, Texas, for instruction, from Camp Hancock, Lieut. J. A. BOZARTH, McLeansboro; from Fort Oglethorpe, Capt. G. D. DRENNAN, Woodhull.

To Fort Sheridan, Ill., base hospital, from Camp Custer, Lieut. B. W. CLAYPOOL, Chicago; from Camp Grant, Capt. G. S. DUNTLEY, Bushnell; Lieut. H. W. VERNON, Chicago; from Fort Snelling, Major E. K. FINDLAY, Chicago.

To Fort Snelling, Minn., from Fort Riley, Capt. E. Z. LEVITIN, Peoria.

To Lakewood, N. J., from Hoboken, Lieut. E. J. DEVINE, Chicago.

To Nashville, Tenn., Meharry Medical College and Fisk University, from duty as a private, Lieut. W. H. CALHOUN, Chicago.

To Plattsburg Barracks, N. Y., base hospital, from Camp Devens, Major F. S. CHURCHILL, Chicago.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp A. A. Humphreys, Va.*, base hospital, from Fort Oglethorpe, Lieut. O. B. ORMSBY, Murphysboro. On completion *to Camp Dix, N. J.*, base hospital, from Fort Oglethorpe, Capt. J. E. WOELFLE, Cairo; Lieut. K. W. WAHLBERG, Moline.

To Roland Park, Md., from Camp Gordon, Capt. OTIS H. MACLAY, Chicago.

To San Antonio, Texas, Kelly Field, from Wichita Falls, Texas, Capt. R. H. KUHNS, Chicago. *To examine the command for nervous* and mental diseases, Lieut. F. A. CAUSEY, Peoria.

To Waynesville, N. C., from Army Medical School, Lieut. W. S. NEEDHAM, Hanna City; from New Haven, Lieut. J. L. ANDERSON, Winfield.

To Williamsbridge, N. Y., from Chicago, Major W. FULLER, Chicago.

The following order has been revoked: *To Fort Oglethorpe*, evacuation hospital, from Fort Riley, Lieut. F. C. FINK, Pleasant Plains.

Indiana

To Ames, Iowa, from Pine Bluff, Ark., Capt. A. T. FAGALY, Lawrenceburg.

To Boston, Mass., from Camp Custer, Lieut. V. G. BLACK, Fishers.

To Camp A. A. Humphreys, Va., base hospital, *from* Fort Oglethorpe, Capt. A. W. LLOYD, Hammond.

To Camp Abraham Eustis, Va., base hospital, from Camp Sheridan, Lieut. E. H. CLAUSER, Muncie.

To Camp Crane, Pa., base hospital, from Camp Zachary Taylor, Lieut. J. G. BOSTWICK, Mishawaka; from Lakewood, Lieut. G. N. DRULEY, North Webster. Evacuation hospital, from Camp Grant, Lieut. B. E. LEMMON, Greencastle.

To Camp Jackson, S. C., from Camp Custer, Lieut. H. H. ISAACS, Tangier.

To Camp Meade, Md., from Fort Leavenworth, Capt. D. V. McCLARY, Dale.

To Camp Pike, Ark., from Camp Zachary Taylor, Lieut. H. G. HAMER, Indianapolis.

To Camp Sevier, S. C., base hospital, from Fort Oglethorpe, Lieuts. R. P. HALE, East Chicago; L. R. ELLARS, Peruna.

To Camp Shelby, Miss., base hospital, from Camp Bowie, Capt. M. I. ROSENTHAL, Fort Wayne; from Camp Jackson, Capt. J. W. SHAFER, Lafayette; from Fort Oglethorpe, Capt. R. M. TILTON, Columbus.

To Camp Sheridan, Ala., from Camp Colt, Capt. C. L. ROWLAND, West Point.

To Camp Upton, N. Y., base hospital, from Camp Grant, Capt. C. S. BOARDMAN, Gary.

To Camp Wadsworth, S. C., base hospital, from Fort Oglethorpe, Lieut. M. B. GUTHRIE, Bedford.

To Camp Wheeler, Ga., base hospital,, for instruction, from Fort Oglethorpe, Lieut. C. A. McNEILL, Indianapolis.

To Fort Des Moines, Iowa, from Camp Dodge, Capt. I. M. WASHBURN, Rensselaer.

To Fort Myer, Va., from Fort McHenry, Capt. G. W. BONER, Washington.

To Fort Oglethorpe, evacuation hospital, from Camp Jackson, Capt. H. H. WHEELER, Indianapolis; from Camp Sevier, Capt. O. E. FINK, Terre Haute; from Camp Zachary Taylor, Lieut. J. W. CARMACK, Indianapolis. For instruction, from Ann Arbor, Capt. H. B. SHACKLETT, New Albany.

To Hoboken, N. J., base hospital, from Fort Oglethorpe, Lieut. J. V. KERRIGAN, Michigan City.

To Rockefeller Institute for instruction, from Camp Meade, Lieut. E. L. SCHAIBLE, Gary; from New Haven, Capt. J. P. SEALE, Fairmount. For instruction in the treatment of infected wounds and on completion *to Camp Dix, N. J.*, base hospital, from Fort Oglethorpe, Capt. F. A. ZELLER, Union City.

To Williamsbridge, N. Y., from Camp Upton, Capt. H. B. COX, Morristown.

To Washington, D. C., from Camp Zachary Taylor, Lieut. C. W. COREY, Hartford City.

Iowa

To Boston, Mass., from Camp Custer, Capt. T. LUCAST, Forest City.

To Camp Abraham Eustis, Va., from Camp Custer, Lieut. J. W. MYERS, Sheldon.

To Camp Crane, Pa., mobile hospital, from Fort Oglethorpe, Capt. R. B. MORDEN, Des Moines; Lieut. T. A. BURKE, Mason City.

To Camp Jackson, S. C., from Camp Custer, Lieut. C. C. BOWIE, Dedham.

To Camp Sevier, S. C., base hospital, for instruction, from Fort Oglethorpe, Lieut. C. E. DAKIN, Mason City.

To Camp Sheridan, Ala., from Fort Oglethorpe, Capt. I. W. TRAVERSE, Fort Madison.

To Camp Upton, N. Y., base hospital, from Fort Oglethorpe, Capt. C. W. MEHLOP, Dubuque.

To Camp Wadsworth, S. C., base hospital, from Camp Bowie, Lieut. C. E. MAGOUN, Sioux City; from Camp Travis, Capt. G. W. YAVORSKY, Belle Plaine.

To Camp Wheeler, Ga., as sanitary inspector, Capt. H. R. REYNOLDS, Clinton. Base hospital, from Camp Sheridan, Lieut. R. E. PARRY, Scranton.

To Fort Des Moines, Iowa, from Walter Reed General Hospital, Capt. J. M. KILBORNE, Sioux City.

To Fort Oglethorpe, evacuation hospital, from Camp Cody, Lieut. J. E. REEDER, Sioux City. For instruction, Lieut. H. G. MOERSHEL, Homestead.

To Fort Sheridan, Ill., base hospital, from Fort Riley, Lieut. J. R. BLACK, Jefferson.

To Rockefeller Institute for instruction, from New Haven, Lieut. W. H. HOMBACH, Remsen.

The following order has been revoked: *To Camp Cody, N. M.*, from Hawaiian Department, Major A. V. HENNESSY, Council Bluffs.

Kansas

To Boston, Mass., from Camp Custer, Capt. H. G. HUNSBERGER, Mount Hope; Lieut. C. W. LONGENECKER, Kingman. For instruction, from Camp Zachary Taylor, Capt. G. M. GAFFORD, Kinsley.

To Camp Jackson, S. C., from Camp Custer, Lieut. W. S. HUDIBURG, Independence.

To Fort Des Moines, Iowa, from Lakewood, Lieut. H. M. WEBB, Humboldt.

To Fort Douglas, Utah, from New Haven, Lieut. T. M. AGNEW, Wichita.

To Fort Oglethorpe, evacuation hospital, *from* El Paso, Capt. L. B. SPAKE, Kansas City. For instruction, Lieut. W. H. YOUNG, Fredonia.

To Fort Sheridan, Ill., base hospital, from Fort Riley, Lieut. W. P. CALLAHAN, Wichita.

To Rockefeller Institute for instruction, from New Haven, Lieut. R. W. VAN DEVENTER, Wellington.

The following orders have been revoked: *To Hoboken, N. J.*, from Fort Oglethorpe, Capt. G. A. LANDES, Parsons. *To San Antonio, Texas*, Kelly Field, from *Garden City*, Lieut. W. H. ROBINSON, Endira.

Kentucky

To Camp Crane, Pa., base hospital, from Camp Hancock, Capt. J. R. COWAN, Danville; from New Haven, Capt. H. T. LIGGETT, Louisville; Lieut. W. G. COMBS, Kirksville.

To Camp Shelby, Miss., base hospital, from Camp Gordon, Lieut. A. H. SHEMWELL, Paducah; from Fort Oglethorpe, Lieut. S. L. HENSON, Benton.

To Camp Sheridan, Ala., from Camp Meade, Capt. J. G. TALBOT, Burkesville; from Fort Oglethorpe, Capt. W. F. ALVEY, Elizabethtown; Lieut. C. H. JONES, Lynn Grove.

To Camp Travis, Texas, from Hoboken, Capt. E. C. BRANDON, Springfield.

To Fort McPherson, Ga., from Fort Oglethorpe, Lieut. A. C. WILLMOTT, Hutchinson.

To Fort Oglethorpe, evacuation hospital, *from Camp* Shelby, Lieut. J. F. MORGAN, Cynthiana.

To Fort Ontario, N. Y., from Fort Porter, Major M. H. YEAMAN, Henderson.

To Watertown, Mass., *from* Camp Upton, Capt. M. M. MOSS, Bowling Green.

Louisiana

To Camp Beauregard, La., Lieut. W. W. SMITH, Shreveport.

To Camp Greene, N. C., base hospital, from Fort Oglethorpe, Capt. W. H. AIKEN, New Orleans.

To Camp Shelby, Miss., base hospital, from Fort Oglethorpe, Lieut. R. D. MARTINEZ, Bunkie.

To Camp Sheridan, Ala., Lieut. F. PALMER, Blackburn.

To Cape May, N. J., base hospital, from Walter Reed General Hospital, Capt. J. G. MARTIN, Lake Charles.

To Fort Oglethorpt, evacuation hospital from Camp MacArthur, Capt. S. L. WHITE, Ruston; Lieut. R. C. WEBB, Rayne.

To Fort Sheridan, Ill., base hospital, from Fort Riley, Capt. J. L. KELLY, Melrose.

To St. Paul, Minn., Overland Building, from Fort Wayne, Lieut. H. C. CHAMBERS, Girard.

Maine

To Camp Crane, Pa., base hospital, from Fort McPherson, Capt. C. D. McDONALD, Portland.

To Camp Shelby, Miss., base hospital, from Fort Oglethorpe, Lieut. H. W. FROHOCK, Rockland.

To Camp Wheeler, Ga., base hospital, from Camp Gordon, Lieut. H. C. BUNDY, Lake View.

To Camp May, N. J., from Camp Dix, Lieut. C. D. GRAY, Portland.

To Fort Monroe, Va., from Fort Oglethorpe, Lieut. L. O. ROY, Lewiston.

To Fort Oglethorpe, evacuation hospital, from Camp Zachary Taylor, Lieut. L. H. TRUFANT, Norway.

To Fort Porter, N. Y., from Newport News, Capt. F. T. KOYLE, Fort Levett.

To Walter Reed General Hospital, D. C., from Camp Pike, Capt. A. WOODCOCK, Bangor.

The following order has been revoked: *To San Antonio, Texas*, Kelly Field from Garden City, Lieut. R. D. WALTON, Frankfort.

Maryland

To Camp Abraham Eustis, Va., Lieut. J. C. Baldwin, Baltimore.

To Camp Crane, Pa., exacuation hospital, from Camp Meade, Lieut. H. H. WARNER, Baltimore.

To Camp Forest, Ga., to examine drafted men for nervous and mental disasses, from Camp Meade, Lieut. F. N. OGDEN, Sykesville.

To Camp Greene, N. C., base hospital, from Fort Oglethorpe, Lieut. M. RASKIN, Baltimore.

To Camp Sheridan, Ala., base hospital, for instruction, from Fort Oglethorpe, Lieut. E. G. HALL, Baltimore.

To Camp Upton, N. Y., base hospital, from Camp Lee, Lieut. W. L. JACKSON, Baltimore; from Camp Meade, Lieut. S. H. STREETT, Baltimore; from Camp Shelby, Lieut. G. W. BISHOP, Govans.

To Fort San Houston, Texas, Capt. R. E. Caldwell, Bivalve.

To Garden City, N. Y., to examine the troops for cardiovascular diseases, from Lakewood, Lieut. J. T. KING, Jr., Baltimore.

To Walter Reed General Hospital, D. C., for instruction, from Fort Oglethorpe, Lieut. W. L. DENNY, Baltimore.

To Washington, D. C., from Edgewood, Major S. L. CHAPPELL.

Massachusetts

To Atlanta, Ga., Emory University, from Miami, Fla., Lieut. A. O. McLAUGHLIN, Haverhill.

To Boston, Mass., Capt. F. H. McCRUDDEN, Boston; from Camp Devens, Lieut. W. H. MERRILL, Lawrence; from Camp Dix, Lieut. W. T. HOLLAND, Boston; from Fort McHenry, Capt. F. A. DAVIS, Boston.

To Camp A. A. Humphreys, Va., as orthopedic surgeon, from Walter Reed General Hospital, Lieut. A. D. VAMVAS, Boston.

To Camp Crane, Pa., base hospital, from [illegible] SMITH, Webster; from Camp Devens, Capt. J. [illegible] from Camp Hancock, Major E. B. BIGELOW, [illegible] hospital, from Camp Dix, Lieut. T. J. NORTON, Pittsfield; from Fort Benjamin Harrison, Lieut. C. L. HOITT, Lynn. Surgical group, from Camp Upton, Capt. W. G. DROUIN, Holyoke; from Camp Wheeler, Capt. E. A. KNOWLTON, Holyoke.

To Camp Devens, Mass., from Fort Oglethorpe, Major W. S. PARKER, Boston.

To Camp Knox, Ky., from Fort Oglethorpe, Lieut. D. G. PLUMB, Melrose.

To Camp McClellan, Ala., base hospital, from Fort Oglethorpe, Lieut. T. R. DONOVAN, Fitchburg.

To Camp Upton, N. Y., as camp surgeon, from East Norfolk, Mass., Major R. P. WILLIAMS.

To Camp Wadsworth, S. C., base hospital, from Camp MacArthur, Capt. J. H. DEWEES, Boston.

To Camp Wheeler, Ga., base hospital, from Fort Oglethorpe, Capt. R. B. OBER, Springfield. Base hospital, for instruction, from Fort Oglethorpe, Capt. L. J. MASKELL, Newton.

To Eastern Department, from Camp Upton, Capts. H. H. SUMNER, Lowell; W. H. ALLEN, Mansfield.

To Fort Bayard, N. M., from Camp Upton, Capt. D. J. HURLEY, Charleston.

To Fort McPherson, Ga., from Camp Devens, Capt. H. J. FITZSIMMONS, Boston.

To Fort Slocum, N. Y., as orthopedic surgeon, from Capt. Joseph E. Johnston, Lieut. M. A. GILBERT, Chelsea.

To Garden City, N. Y., from Mineola, Major C. S. BUTLER, Boston.

To Hoboken, N. J., base hospital, from Camp Wadsworth, Lieut. G. HARTMANN, Lynn.

To Lakewood, N. J., from Camp Devens, Major S. J. MIXTER, Boston.

To New Haven, Conn., from Camp Devens, Major L. H. SPOONER, Boston.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Wheeler, Ga.*, base hospital, from Fort Oglethorpe, Major H. ROBB, Winchester; Lieut. E. W. SMITH, Newton.

To Walter Reed General Hospital, D. C., from Camp Devens, Lieut.-Col. C. FROTHINGHAM, Jr., Boston.

The following orders have been revoked: *To Camp Hancock, Ga.*, base hospital, from Fort Oglethorpe, Lieut. G. L. STEELE, West Springfield. *To Camp Shelby, Miss.*, from Camp Jackson, Lieut. N. HOLDEN, Malden.

Michigan

To Camp Cody, N. M., as assistant to camp surgeon, from Camp Zachary Taylor, Lieut. D. M. GRISWOLD, Grosse Pointe.

To Camp Crane, Pa., mobile hospital, from Camp Meade, Capt. R. K. YOUNG, Detroit.

To Camp Custer, Mich., base hospital, Capt. W. H. DIEBEL, Detroit.

To Camp Joseph E. Johnston, Fla., base hospital, from Camp Bowie, Lieut. W. L. SHERMAN, Detriot.

To Camp Sheridan, Ala., from Angola, Ind., Lieut. A. J. McKILLOP, Wolverine.

To Fairchild, Ohio, Wilbur Wright Field, from Mount Clemens, Lieut. W. L. SHERMAN, Detroit.

To Fort Benjamin Harrison, Ind., Capt. H. G. PALMER, Detroit.

To Fort Crockett, Texas, as tuberculosis examiner, from Fort Sam Houston, Capt. R. L. FELLERS, Detroit.

To Fort Sheridan, Ill., base hospital, from Camp Zachary Taylor, Lieut. J. J. O'MEARA, Jackson; from Fort Des Moines, Lieuts. H. LIEFFERS, Coopersville; G. H. CAMPAU, Detroit.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Wadsworth, S. C.*, base hospital, from Fort Oglethorpe, Lieut. C. J. JENTGEN, Detroit.

To San Antonio, Texas, Kelly Field, to examine troops for cardiovascular diseases, from Camp Pike, Lieut. L. M. BUSH, Detroit.

To Washington, D. C., Bolling Field, from Mount Clemens, Lieut. H. A. MILLER, Lansing.

To Williamsbridge, N. Y., from Camp Jackson, Capt. J. S. BROTHERHOOD, Grand Rapids.

Honorably discharged on account of physical disability incurred in line of duty, Capt. T. G. HOLMES, Detroit.

Resignation of Major G. E. McKEAN, Detroit, accepted.

Minnesota

To Boston, Mass., from Camp Custer, Lieut. A. M. CRANDALL, Fairfax.

To Camp Crane, Pa., from Rochester, Major J. C. MASSON, Rochester. Base hospital, from Camp Dodge, Capt. F. M. MANSON, Worthington; from Fort. McPherson, Capt. A. W. SHALEEN, Hallock; from New Haven, Lieut. W. H. DANIELS, Crookston.

To Camp Joseph E. Johnston, Fla., base hospital, from Camp Wheeler, Lieut. G. C. DITTMAN, St. Paul.

To Camp Shelby, Miss., base hospital, from Fort Oglethorpe, Lieuts. J. E. O'DONNELL, Minneapolis; E. R. REYNOLDS, Rochester.

To Camp Sheridan, Ala., base hospital, for instruction, from Fort Oglethorpe, Capt. J. F. X. GENDRON, Grand Rapids.

To Camp Upton, N. Y., base hospital, from Camp Dodge, Capt. A. E. SMITH, Minneapolis.

To Camp Wheeler, Ga., base hospital, from Camp Shelby, Capt. A. E. BENJAMIN, Minneapolis.

To Fort Benjamin Harrison, Ind., from Cincinnati, Lieut. A. A. TOFTE, Pine City.

To Fort McDowell, Calif., Capt. A. PETERSON, Rochester.

To Fort McPherson, Ga., from Fort Oglethorpe, Major H. M. MORTON, Minneapolis. For instruction, from Camp Pike, Lieut. S. V. HODGE, Minneapolis.

To Fort Sheridan, Ill., base hospital, from Camp Grant, Capt. E. BOECKMANN, St. Paul; Lieuts. C. LEMBKE, C. H. ZANDER, St. Paul.

To Fort Sill, Okla., Post Field, from Bellevue, Ill., Capt. G. T. AYRES, Ely.

To Fort Snelling, Minn., Lieut. J. C. WALKER, Jr., Rochester.

To Rochester, Minn., Mayo Clinic, for instruction, Lieut. B. A. DOGGETT, [illegible]

To [illegible] for instruction, from New Haven, Lieut. L. [illegible] For instruction in the treatment of infected wounds, and on completion *to Camp A. A. Humphreys, Va.*, base hospital, from Fort Oglethorpe, Lieut. H. D. NEWKIRK, Minneapolis.

To Washington, D. C., Surgeon-General's Office, from Fort Sam Houston, Major A. R. COLVIN, St. Paul.

The following order has been revoked: *To San Antonio, Texas*, Kelly Field, from Garden City, Lieut. F. L. POWERS, Pipestone.

Mississippi

To Camp Crane, Pa., base hospital, from Fort Sill, Capt. J. T. IRBY, Enterprise.

To Camp Shelby, Miss., base hospital, from Camp Logan, Capt. E. F. HOWARD, Vicksburg.

To Fort Bayard, N. M., from Denver, Lieut. B. C. BERNARD, Indianola.

To Fort Oglethorpe, evacuation hospital, from Camp Zachary Taylor, Lieut. J. B. HIRSCH, Greenville.

To Hattiesburg, Miss., Mississippi Normal College, from Camp Shelby, Capt. J. R. TACKETT, Meridian.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Sherman, Ohio*, base hospital, from Camp Crane, Capt. J. CRISLER, Jackson.

Missouri

To Boston, Mass., from Camp Custer, Lieuts. O. P. McCARTNEY, Kansas City; C. A. ORR, Mendon.

To Camp Beauregard, La., base hospital, from Fort Riley, Lieut. O. R. CROOKS, Kansas City.

To Camp Crane, Pa., evacuation hospital, from Camp Dodge, Lieut. J. O'CONNELL, St. Louis. Mobile hospital, from Fort Oglethorpe, Capt. G. H. MORELAND Kansas City; from New Haven, Lieut. E. V. KRING, St. Louis. Surgical group, from Colonia, N. J., Capt. V. CADWELL, Poplar Bluff.

To Camp Gordon, Ga., base hospital, for instruction, from Fort Oglethorpe, Lieut. J. M. WILSON, Stoutsville.

To Camp Jackson, S. C., from Camp Custer, Capt. R. L. FOGLE, Otterville.

To Camp MacArthur, Texas, base hospital, Capt. W. E. YOUNT, Cape Girardeau.

To Camp McClellan, Ala., base hospital, for instruction, from Fort Oglethorpe, Lieut. J. D. POE, St. Louis.

To Camp Meade, Md., from Fort Sill, Major F. W. SHAW, Mount Vernon.

To Camp Sevier, S. C., base hospital, from Fort Oglethorpe, Capt. E. P. HAMILTON, Kansas City.

To Camp Shelby, Miss., base hospital, from Fort Oglethorpe, Lieut. F. B. SPENCER, Hannibal.

To Camp Sheridan, Ala., base hospital, from Fort Oglethorpe, Lieut. A. L. HEARST, Kansas City.

To Camp Upton, N. Y., base hospital, from Camp Grant, Lieut. C. D. SCOTT, St. Louis.

To Cincinnati, Ohio, from Fort Riley, Capt. J. MIDDLETON, Kansas City.

To Eastern Department, from Camp Upton, Lieut. H. J. WITTWER, St. Louis.

To Fort McPherson, Ga., from Lexington, Va., Lieut. W. J. BILLETER, Bynumville.

To Fort Oglethorpe, exacuation hospital, from Camp McClellan, Lieut. W. J. SPARHAWK, St. Louis; from Camp Sevier, Capt. W. H. MINTON, St. Joseph. For instruction, from Camp Pike, Capt. C. A. TUCKER, Springfield.

To New Cumberland, Pa., from Fort Oglethorpe, Lieut. J. H. WILLIAMS, Hume.

To New Haven, Conn., from Camp Jackson, Capt. O. L. SUGGETT, St. Louis; from Fort Benjamin Harrison, Lieut. F. R. DEHONEY, Fredericktown.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to his proper station*, Lieut.-Col. M. G. SEELIG, St. Louis.

To San Antonio, Texas, Kelly Field, from Camp Dick, Lieut. I. N. PARRISH, Polo.

The following order has been revoked: *To Jefferson Barracks, Mo.*, Lieut. R. HEREFORD, Ashley.

Montana

To Camp Colt, Pa., from Camp Custer, Lieut. J. R. McDOWELL, Intake.

To Camp Crane, Pa., evacuation hospital, from Camp Grant, Lieut. C. A. JOHNSON, Livingston.

To Fort Riley for instruction, Lieut. A. B. ECKERDT, Helena.

Nebraska

To Camp Abraham Eustis, Va., from Camp Sheridan, Lieut. W. J. McCRANN, Omaha.

To Camp Crane, Pa., base hospital, from Camp Travis, Lieut. J. D. McCARTHY, Omaha.

To Camp Zachary Taylor, Ky., as orthopedic surgeon, from Fort Riley, Lieut. L. K. STRATE, Hastings.

To Fort Oglethorpe, evacuation hospital, from Camp Beauregard, Capt. F. J. WURTELE, North Platte; from Camp Bowie, Capt. G. H. RATHBUN, Fremont.

To Indianapolis, Ind., from Rantoul, Lieut. N. L. CRISS, Omaha.

To Lake Charles La., Gerstner Field, from Fort Oglethorpe, Lieut. F. W. PLEHN, Scottsbluff.

To New Haven, Conn., Yale Army Laboratory School, from Fort Oglethorpe, Major H. E. EGGERS, Omaha.

The following order has been revoked: *To Fort Oglethorpe*, evacuation hospital, from Camp Jackson, Capt. W. N. ANDERSON, Omaha.

Nevada

To Camp Crane, Pa., Surgical Group from Camp Cody, Capt. L. V. SMITH, Reno.

To Fort Douglas, Utah, for instruction, Lieut. W. H. RILEY, Aurora.

New Hampshire

To Camp Upton, N. Y., base hospital, from Fort Oglethorpe, Lieut. F. E. SPEAR, Woodsville.

To Camp Sheridan, Ala., base hospital, from Fort Oglethorpe, Lieut. E. W. COATES, Concord.

To Dallas, Texas, from San Antonio, Capt. D. R. CHASE, Lebanon.

To Mineola, N. Y., Hazelhurst Field, for instruction, from Colonia, Capt. G. H. PARKER, Hanover.

New Jersey

To Camp A. A. Humphreys, Va., to examine drafted men for nervous and mental diseases, and on completion *to his proper station*, from Washington, Capt. G. PAYNE, Cedar Grove.

To Camp Crane, Pa., from Camp Zachary Taylor, Capt. N. W. CURRIE, Plainfield. Base hospital, from Camp Dix, Capt. F. R. CORSON, Atlantic City; from Camp Greene, Lieut. J. WILLIS, Jr., Jersey City. Evacuation hospital, from Camp Gordon, Lieut. R. J. VREELAND, Clifton. Mobile hospital, from Camp Lee, Capt. J. H. ORAM, Paterson.

To Camp Dix, N. J., from Camp Lee, Capt. C. J. AILPERIN, Newark.

To Camp Joseph E. Johnston, Fla., base hospital, for instruction, from Fort Oglethorpe, Lieut. T. SMITH, Sea Isle City.

To Camp Logan, Texas, base hospital, from Fort Oglethorpe, Lieut. L. D. WHITNEY, Belleville.

To Camp Sevier, S. C., base hospital, from Camp Gordon, Lieut. J. N. PANNULLO, Newark. Base hospital, for instruction, from Fort Oglethorpe, Lieut. P. A. D'ACIERENO, West Hoboken.

To Camp Shelby, Miss., to examine drafted men for nervous and mental diseases, from Washington, Capt. P. C. WASBURN, Cape May.

To Camp Sheridan, Ala., from Fort Oglethorpe, Lieuts. T. H. PLATT, Dunellen; J. J. LEVY, Ocean Gate.

To Camp Upton, N. Y., base hospital, from Fort Oglethorpe, Capt. F. R. HAUSSLING, Newark; Lieut. M. H. STEIN, Elizabeth; from Hoboken, Major L. O. TARLETON.

To Camp Wadsworth, S. C., as orthopedic surgeon, from Fort Oglethorpe, Lieut. F. J. T. WAS, Paterson. Base hospital, from Fort Oglethorpe, Capt. A. NELON, Jersey City.

To Camp Wheeler, Ga., base hospital, from Fort Oglethorpe, Lieut. A. UREWITZ, West Hoboken.

To Camp Zachary Taylor, Ky., as tuberculosis examiner, from Syracuse, Capt. G. E. HARHEN, Newark.

To Colonia, N. J., for instruction, from Camp Hancock, Capt. A. S. HARDEN, Newark.

To Fort Ethan Allen, Vt., base hospital, from Camp Dix, Major M. J. SYNNOTT, Montclair.

To Fort Monroe, Va., from New York, Lieut. H. F. WESTCOTT, Bridgeton.

To West Point, N. Y., from Syracuse, Lieut. J. WECHSLER, Jersey City.

Resignation of Lieut. C. E. BORN, West Hoboken, accepted.

The following order has been revoked: *To Camp Crane, Pa.*, Surgical Group, from Fort McHenry, Capt. J. L. FEWSMITH, Newark.

New Mexico

To Boston, Mass., from Fort Oglethorpe, Lieut. M. McCAHILL, Albuquerque.

To Camp McClellan, Ala., as assistant to the division surgeon, Major H. R. BROWN, Albuquerque.

New York

To Arcadia, Fla., Carlstrom Field, from Fort Wayne, Mich., Major H. L. SCHELLING, Brooklyn.

To Boston, Mass., for instruction, from Fort Oglethorpe, Capt. T. FARNAM, New York.

To Camp A. A. Humphreys, Va., from Plattsburg Barracks, Lieut. W. C. THOMPSON, Plattsburgh.

To Camp Abraham Eustis, Va., from Eastern Department, Capt. F. W. HUNTER, Fort Totten.

To Camp Crane, Pa., base hospital, from Camp Abraham Eustis, Lieut. H. S. MARCLAY, New York; from Camp Greene, Capt. R. M. JONES, New York; from Camp Jackson, Major R. H. McCONNELL, New York; from Camp Meade, Capt. F. COONLEY, Staten Island; from Camp Sevier, Capt. W. E. BOWEN, Rochester; from Fort Douglas, Lieut. A. E. GORDIN, New York; from Fort Oglethorpe, Major H. L. K. SHAW, Albany; Capt. A. H. RODGERS, Corning; from New Haven, Capt. W. H. VEEDER, Rochester; from Syracuse, Lieut. D. BRUMBERG, Buffalo; from Williamsbridge, Major D. D. ROBERTS, Brooklyn; Capt. C. C. CORYELL, New York. Evacuation hospital, from Camp Lee, Lieut. I. J. RUSSELL, Setauket. Mobile hospital, from Camp Greene, Lieut. W. L. MUNSON, Granville; from Fort Oglethorpe, Lieut. B. HUGHES, New York. Surgical group, from New York, Capt. E. A. KING, New York.

To Camp Custer, Mich., base hospital, from Camp Jackson, Capt. C. EGGERS, New York.

To Camp Devens, Mass., base hospital, from Camp Jackson, Lieut. H. R. MIXSELL, New York.

To Camp Dix, N. J., base hospital, from Long Island City, Capt. A. L. BENEDICT, Buffalo. Base hospital, for instruction, Lieut. J. M. SCHAFFER, New York.

To Camp Gordon, Ga., base hospital, for instruction, from Camp Zachary Taylor, Capt. B. G. BLACKMAR, Brooklyn.

To Camp Greene, N. C., base hospital, from Camp Hancock, Capt. H. D. FURNISS, New York.

To Camp Hancock, Ga., from Lakewood, Lieut. P. J. WHITE, Jr., Green Ridge.

To Camp Jackson, S. C., to examine the command for nervous and mental diseases, from New York, Lieut. J. MARSHACK, New York.

To Camp Joseph E. Johnson, Fla., base hospital, from Camp Shelby, Capt. R. S. TAYLOR, Buffalo.

To Camp Lee, Va., from Fort Slocum, Major W. C. McKNIGHT, New York.

To Camp McClellan, Ala., base hospital, for instruction, from Fort Oglethorpe, Capt. C. E. ELKINS, Massena.

To Camp Meade, Md., from the Surgeon-General's Office, Capt. L. L. ROOS, New York. As camp surgeon, from Camp Benning, Major E. A. SOUTHALL, Buffalo.

To Camp Sevier, S. C., base hospital, from Fort Oglethorpe, Lieut. R. G. HAYS, Brooklyn.

To Camp Shelby, Miss., base hospital, from Fort Oglethorpe, Lieuts. M. H. BARSKY, M. SOLETSKY, New York. To examine drafted men for nervous and mental diseases, from Washington, Capt. W. R. WOODBURY, Rochester.

To Camp Sheridan, Ala., Capt A. J. HAMBROOK, Troy; from Fort Oglethorpe, Capt. A. MARK, Elmira; Lieut. F. M. CHAFFEE, Middlesex.

To Camp Travis, Texas, base hospital, for instruction, from Fort Oglethorpe, Capt. M. L. HAVILAND, Glen Falls.

To Camp Upton, N. Y., base hospital, Lieut. H. H. BAUCKUS, Buffalo; from Camp Custer, Capt T. F. FOLEY, Elmira; from Fort Oglethorpe, Capt. G. R. CRITCHLOW, Buffalo; from New York, Major H. S. BAKETEL, New York. Base hospital, for instruction, from Hoboken, Capt. J. E. GOLDING, Brooklyn.

To Camp Wadsworth, S. C., base hospital, from Camp Greene, Lieut. R. C. SCHLEUSSNER, New York; from Fort Oglethorpe, Capt. G. H. DILL, Utica; Lieut. H. M. COX, New York. To examine the troops for cardiovascular diseases, from Camp Gordon, Lieut M. J. RADIN, New York.

To Camp Wheeler, Ga., as division surgeon, Major H. R. GAYLORD, Buffalo. Base hospital, from Fort Oglethorpe, Lieut. A. C. FREEMAN, New York.

To Camp Zachary Taylor, Ky., from Army Medical School, Lieut. F. L. GATES, New York.

To Cape May, N. J., base hospital, from Camp Sherman, Lieut. J. G. MORRESSEY, Yonkers; from Fort Oglethorpe, Lieut. J. G. J. GRIMLEY, New York.

To Denver, Colo., from Camp Dix, Lieut. C. R. MILLER, Ogdensburg.

To Eastern Department, from Camp Upton, Capt. F. O. HUNTER, Fort Totten.

To East Norfolk, Mass., from Camp Devens, Lieut. E. M. POATE, New York.

To Fort Ethan Allen, Vt., from New Haven, Lieut. W. C. PENDILL, Huntington; from Syracuse, Capt. M. CAMPBELL, New York. Base hospital, from Camp Devens, Capt. F. W. SEYMOUR, Rochester; from Camp Dix, Capt. F. L. NELSON, New York; Lieut. J. T. FOWKES, Lafargeville.

To Fort McHenry, Md., from Camp Zachary Taylor, Major J. P. FISKE, New York.

To Fort Monroe, Va., from Fort Keough, Major J. B. COOKE, Cooperstown.

To Fort Oglethorpe, from Fort Porter, Lieut. A. B. FERGUSON, New York. Evacuation hospital, from Camp Jackson, Lieut. A. ROTH, Brooklyn; from Camp MacArthur, Lieut. I. E. SUMMER, Brooklyn. For instruction, Lieuts. E. L. FROST, Buffalo; W. D. EDWARDS, New York; from New Haven, Lieut. F. C. McCLELLAN, Canandaigua.

To Lakewood, N. J., from Fort Oglethorpe, Lieuts. J. BECKENSTEIN, Brooklyn; H. C. DORSEY, M. A. McIVER, New York. For instruction, from Army Medical School, Lieuts. R. A. CORBIN, New York; B. J. SLATER, Rochester.

To Lonoke, Ark., Eberts Field, as flight surgeon, from Rantoul, Capt. W. A. SCRUTON, New York.

To Mineola, N. Y., Hazlehurst Field, for instruction, from Austin, Capt. F. A. JOHNSON, Kingston; from Camp McClellan, Capt. J. J. KING, New York; from New York, Capt. J. D. RICHARDS, New York.

To New Haven, Conn., Yale Army Laboratory School, from Camp Custer, Major J. S. BILLINGS, New York; from Camp Dix, Major B. F. KNAUSE, Brooklyn. For instruction, from Lakewood, Lieut. H. T. HYMAN, New York.

To New York, Neurological Institute, for intensive training in neuropsychiatry, Capt. J. R. HARDING, Elmira. To give instruction, from Plattsburg Barracks, Capt. W. TIMME, New York.

To report to the commanding general, Southeastern Department, from North Charleston, Lieut. M. E. GREGG, Mottville.

To Rockefeller Institute for instruction, from New Haven, Lieuts. L. J. STRONG, W. E. ZIELINSKI, Buffalo. For instruction in the treatment of infected wounds, and on completion *to Camp Upton, N. Y.,* base hospital, from Fort Oglethorpe, Lieut. F. S. WETHERELL, Syracuse.

To Washington, D. C., Surgeon-General's Office, from Waynesville, N. C., Lieut.-Col. C. E. DAVIS, Albany.

To Waynesville, N. C., from Camp Grant, Capt. C. A. NEWCOMB, Newark.

To White Plains, N. Y., from Fort Sam Houston, Major J. I. RUSSELL, New York.

Honorably discharged on account of physical disability incurred in line of duty, Lieut. A. M. SARTORIUS, Brooklyn.

The following orders have been revoked: *To Camp Fremont, Calif.,* base hospital, from Camp Lewis, Lieut. A. G. DeSANCTIS, New York. *To San Antonio, Texas,* Kelly Field, from Garden City, Lieut. M. GROLLMAN, Brooklyn.

North Carolina

To Camp Crane, Pa., surgical group, from Camp Wheeler, Major E. A. LOCKETT, Winston-Salem.

To Camp Jackson, S. C., base hospital, for instruction, from Fort Oglethorpe, Capt. N. D. ADAMS, Murphy.

To Camp Joseph E. Johnston, Fla., base hospital, from Camp Beauregard, Lieut. G. E. BOWDOIN, Wilmington.

To Camp Kendrick, N. J., from Camp Upton, Capt. L. D. FLOYD, Cerro Gordo.

To Rockefeller Institute for instruction, from New Haven, Capt. W. P. JACOCKS, Elizabeth City.

North Dakota

To Camp Crane, Pa., base hospital, from Fort Douglas, Lieut. W. S. ANDERSON, Grand Forks.

To Fort Oglethorpe, evacuation hospital, from Camp Sheridan, Capt. W. A. GERRISH, Jamestown.

To Fort Snelling, Minn., for instruction, from Camp Grant, Lieut. W. H. WITHERSTINE, Grand Forks.

Ohio

To Army Medical School for instruction, from Fort Oglethorpe, Capt. E. A. KLEIN, Norwood.

To Atlanta, Ga., Armory Building, from Fort Clinton, Major F. E. ARTAUD, Columbus.

To Camp Cole, Pa., from Camp Upton, Lieut. C. H. HARALSON, Mount Vernon.

To Camp Crane, Pa., base hospital, from Camp Travis, Lieut. F. W. McNAMARA, Youngstown; from Fort Oglethorpe, Lieuts. H. H. LOWE, Leesburg; W. E. HIGGS, N. N. MEYER, Youngstown. Evacuation hospital, from Camp Sherman, Capt. B. F. CURETON, Walhonding. Mobile hospital, from Fort Oglethorpe, Lieut. W. A. TEVELUWE, Cincinnati.

To Camp Custer, Mich., base hospital, for instruction, from Fort Oglethorpe, Lieut. E. R. MELLOTT, Toledo.

To Camp Grant, Ill., as assistant to camp surgeon, from Fort Oglethorpe, Lieut. G. A. MILLER, Hudson.

To Camp MacArthur, Texas, base hospital, for instruction, from Fort Oglethorpe, Capt. W. E. RANZ, Youngstown.

To Camp McClellan, Ala., base hospital, for instruction, from Fort Oglethorpe, Lieut. M. H. BOWERS, Perrysburg.

To Camp Meade, Md., from Camp Travis, Lieut. C. M. DOUTHITT, Athens.

To Camp Sevier, S. C., base hospital, from Fort Oglethorpe, Lieut. F. F. KRAMER, Cincinnati.

To Camp Sheridan, Ala., from Fort Oglethorpe, Lieut. K. C. EVANS, Payne.

To Camp Upton, N. Y., base hospital, from Camp Jackson, Capt. M. MILLIKIN, Hamilton.

To Camp Wheeler, Ga., to examine troops for cardiovascular diseases, from Camp Gordon, Lieut. H. B. WEISS, Cincinnati.

To Fort Benjamin Harrison, Ind., from Central Department, Lieut. W. B. KEATOR, Findlay; from Cincinnati, Lieut. E. D. HARPER, Guysville.

To Fort Ethan Allen, Vt., from Syracuse, Lieut. F. B. SNODGRASS, Kenton.

To Fort Oglethorpe, evacuation hospital, from Camp Zachary Taylor, Lieut. F. J. GALLAGHER, Cleveland. For instruction, Lieut. W. ADAIR, Lorain.

To Fort Ontario, N. Y., from Camp Gordon, Lieut. W. A. KOCH, Bucyrus.

To Fort Sam Houston, Texas, from Camp Beauregard, Capt. C. A. HOWELL, Columbus.

To Fort Sheridan, Ill., base hospital, from Camp Grant, Capt. W. A. MEDLIN, Cleveland; from Fort Des Moines, Lieut. H. L. PRICE, Toledo; from Fort Riley, Lieut. R. R. KERKOW, Hacksville; from Fort Snelling, Major H. Z. SILVER, Eaton.

To Fort Sill, Okla., Post Field, from Bellevue, Ill., Lieut. A. J. SHOEMAKER, Columbus.

To Fort Slocum, N. Y., from Camp Sherman, Capt. A. L. STEINFELD, Toledo.

To Hoboken, N. J., from Fort Oglethorpe, Capt. L. A. BREWER, Toledo. Base hospital, from Fort Oglethorpe, Lieut. J. F. WRIGHT, Toledo.

To New Cumberland, Pa., from Erie, Pa., Lieut. O. P. ANDREWS, East Liverpool.

To New York, Columbia University, from Eastern Department, Lieut. C. S. CAVETT, North Baltimore.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital, D. C.,* for instruction, from Fort Oglethorpe, Capt. F. B. LIVERMORE, Barberton.

To Wilberforce, Ohio, Wilberforce University, Lieut. M. L. CRAWFORD, Cleveland.

The following orders have been revoked: *To Fort Oglethorpe* for instruction, Lieut. H. C. WHITE, Columbus. *To New York,* Bellevue Hospital, for instruction, and on completion *to his proper station,* from Walter Reed General Hospital, Capt. A. H. SMITH, Marietta. *To San Antonio, Texas,* Kelly Field, from Garden City, Lieuts. C. H. VEROVITZ, Cleveland; F. E. HALL, Springfield.

Oklahoma

To Camp Gordon, Ga., from Southern Department, Capt. F. L. WALTON, Muskogee.

To Camp Sheridan, Ala., base hospital, from Fort Oglethorpe, Lieut. R. E. WAGGONER, Pawnee.

To Camp Upton, N. Y., base hospital, from Fort Oglethorpe, Capt. G. A. KILPATRICK, McAlester.

To Cape May, N. J., base hospital, from Fort Sill, Lieut. T. J. NUNNERY, Granite.

To Fort Ethan Allen, Vt., from Camp Devens, Lieut. T. M. TOLER, Wirt.

To Fort Oglethorpe, evacuation hospital, from Camp Cody, Lieut. H. P. PRICE, Tulsa. For instruction, Lieut. C. M. BLOSS, Okemah.

To Richmond, Va., from Hampton, Lieut. M. H. EDENS, Anadarko.

Oregon

To Camp Crane, Pa., base hospital, from Camp Lewis, Capt. E. A. SOMMER, Portland.

To Camp Dodge, Iowa, base hospital, from San Francisco, Capt. R. H. WELLINGTON, Portland.

To Fort Oglethorpe, evacuation hospital, from Camp McClellan, Lieut. R. F. JAMES, Portland.

To San Francisco, Calif., Letterman General Hospital, for instruction, Lieut. W. R. ANDERSON, Portland; from Camp Lewis, Capt. M. K. HALL, Grand.

Pennsylvania

To Azalea, N. C., from Camp Wadsworth, Capt. F. A. BRIDGETT, Philadelphia.

To Boston, Mass., from Camp Hancock, Capt. J. A. BROOKE, Philadelphia; from Fort Oglethorpe, Lieut. J. S. LOGAN, Pittsburgh. For instruction, from Camp Lee, Capt. L. VAN HORN, Philadelphia.

To Camp Crane, Pa., base hospital, from Army Medical School, Capt. C. E. LLEWELLYN, Philadelphia; from Fort Benjamin Harrison, Lieut. C. W. ESPY, Wilkes-Barre; from Fort McPherson, Capt. H. C. UPDEGRAFF, Pittsburgh; from Fort Oglethorpe, Capt. W. J. BAILEY, Connellsville. Evacuation hospital, from Camp Greene, Lieut. W. E. BROWN, Homestead. Mobile hospital, from Camp Wheeler, Capt. C. B. NOECKER, Scranton; from Camp Zachary Taylor, Lieut. P. T. HOPE, Mercer.

To Camp Gordon, Ga., base hospital, for instruction, from Fort Oglethorpe, Capt. W. C. WILSON, Clearfield.

To Camp Greene, N. C., base hospital, from Camp Beauregard, Lieut. H. C. WINSLOW, Meadville; from Camp Gordon, Capt. J. E. GOTWALS, Phoenixville; from Camp Hancock, Lieut. A. H. JAHN, Pittsburgh; from Camp McClellan, Capt. H. S. FISH, Sayre.

To Camp Jackson, S. C., base hospital, for instruction, Lieut. D. RIESMAN, Philadelphia.

To Camp Joseph E. Johnston, Fla., as tuberculosis examiner, from New Haven, Lieut. M. DEPTA, Mount Pleasant. Base hospital, from Camp Jackson, Capt. W. T. PYLE, Swissvale. Base hospital, for instruction, from Fort Oglethorpe, Capt. P. R. CORNELL, Easton.

To Camp McClellan, Ala., base hospital, from Fort Oglethorpe, Capt. J. H. RORKE, Reading.

To Camp Sevier, S. C., base hospital, from Biltmore, N. C., Capt. W. S. LONG, Reading; from Camp Hancock, Lieut. A. H. MURRAY, Sayre.

To Camp Shelby, Miss., base hospital, from Fort Oglethorpe, Capts. W. F. COPE, Easton; A. COWAN, Philadelphia; Lieuts. W. E. HODGSON, Glassport; W. F. WHITE, Wellsboro.

To Camp Sheridan, Ala., from Camp Colt, Lieut. F. D. LOHR, Derry; from Fort Oglethorpe, Capt. W. S. WRAY, Philadelphia.

To Camp Travis, Texas, from Orangeburg, Lieut. S. W. REEVES, Fawn Grove.

To Camp Upton, N. Y., from Camp Meade, Capt. R. M. ALEXANDER, Reading. Base hospital, from Camp Meade, Capt. G. B. MORELAND, Pittsburgh; from Fort Oglethorpe, Lieut. G. M. SPROWLS, Imperial; from Hoboken, Lieut. G. W. CONRAD, Johnstown.

To Camp Wadsworth, S. C., base hospital, from Fort Oglethorpe, Lieuts. R. C. SEIPEL, Easton; E. S. HUBBS, Philadelphia.

To Camp Wheeler, Ga., base hospital, from Camp Bowie, Lieut. E. M. ELLSWORTH, Wilkes-Barre; from Camp Sheridan, Capt. R. F. RIDPATH, Philadelphia.

To Camp Zachary Taylor, Ky., from Army Medical School, Major J. H. AUSTIN, Ardmore.

To Cape May, N. J., base hospital, from Camp Lee, Capt. G. A. van LENNEP, Philadelphia; from Fort Douglas, Capt. H. A. SPANGLER, Carlisle; from Walter Reed General Hospital, Capt. C. R. PALMER, West Chester; Lieut. W. B. SWARTLEY, Philadelphia.

To Eastern Department, from Camp Upton, Capt. B. P. STEELE, McVeytown.

To Fort Caswell, N. C., from Fort Oglethorpe, Lieut. H. M. GANGLOFF, Pittsburgh.

To Fort McPherson, Ga., for instruction, from Camp Sheridan, Capt. J. W. DIXON, Wilkinsburg.

To Fort Oglethorpe, base hospital, Major W [illegible] Evacuation hospital, from Camp Gordon, Lie[illegible] Greenville; from Camp Jackson, Capt. W. [illegible] from Camp Shelby, Lieut. M. PLATT, Philad[illegible] Capt. E. L. DICKEY, Oil City. For instruction, Lieut. A. LEVY Philadelphia.

To Garden City, N. Y., to examine troops for cardiovascular diseases, from Lakewood, Lieut. L. N. GAY, Shamokin.

To Hampton, Va., Hampton Institute, Lieut. W. S. TAYLOR, Carlisle.

To Hoboken, N. J., from Camp Devens, Lieut. L. W. KOHN, Philadelphia; from the Surgeon-General's Office, Lieut.-Col. D. SILVER, Pittsburgh.

To Jefferson Barracks, Mo., from Camp Custer, Major J. D. MILLIGAN, Pittsburgh.

To Lakewood, N. J., from Fort Oglethorpe, Lieut. R. GOODMAN, Philadelphia.

To Lancaster, Pa., Franklin and Marshall College, from Camp Crane, Lieut. G. H. KIRKPATRICK, Wilkinsburg.

To Mineola, N. Y., Hazlehurst Field, for instruction, from Fort Oglethorpe, Capt. J. L. WAGNER, Reading.

To Rockefeller Institute, from Camp Upton, Capt. J. V. KLAUDER, Philadelphia. For instruction, from New Haven, Lieuts. J. A. COEN, Bristoria; L. W. WRIGHT, Williamsport.

To San Francisco, Calif., Letterman General Hospital, from Walter Reed General Hospital, Capt. R. J. HENDERSON, Bowmansville.

To South Bethlehem, Pa., Lehigh University, from Camp Crane, Lieut. L. L. PORCH, Johnstown.

To Washington, D. C., from Camp Meade, Lieut. W. J. CREIGHTON, Philadelphia. Surgeon-General's Office, from Walter Reed General Hospital, Capt. C. C. YOUNT, Philadelphia.

To Waynesville, N. C., as commanding officer, from Azalea, Major W. G. TURNBULL, Cresson.

To West Baden, Ind., from Lakewood, Major W. H. THOMAS, Philadelphia.

To Whipple Barracks, Ariz., from Fort Bayard, Major R. BEW, Gettysburg; from New Haven, Lieut. H. A. KIPP, Pittsburgh.

The following orders have been revoked: *To Camp Wadsworth, S. C.*, base hospital, from Fort Oglethorpe, Lieut. J. J. SWEENEY, Heckscherville. *To San Antonio, Texas*, Kelly Field, from Garden City, Capt. W. L. SCOTT, Joffre.

Porto Rico

To Camp Las Casas, P. R., from Cayey, P. R., Capt. A. C. SMITH, Henry Barracks.

Rhode Island

To Camp Crane, Pa., mobile hospital, from Camp Sevier, Capt. C. E. HAWKES, Providence.

To East Norfolk, Mass., from Camp Devens, Lieut. C. H. GANNON, Howard.

To Fort McPherson, Ga., for instruction, from Fort Oglethorpe, Lieut. P. H. RUSHTON, Providence.

South Carolina

To Camp Bowie, Texas, base hospital, from Fort Oglethorpe, Lieut. W. H. PRICE, Charleston.

To Camp Sheridan, Ala., from Fort Oglethorpe, Lieut. B. D. CAUGHMAN, Columbia.

To Camp Upton, N. Y., base hospital, from Camp Custer, Capt. L. PETERS, Columbia.

To Corpus Christi, Texas, from Fort Oglethorpe, Lieut. B. T. SHARPTON, Clarks Hill.

To Fort Oglethorpe for instruction, Lieut. I. J. CAMPBELL, Clover.

To Fort Sill, Okla., base hospital, from Camp Custer, Lieut. D. V. MYERS, Spartanburg.

To Orangeburg, S. C., Lieut. S. C. CLOWNEY, Spartanburg.

South Dakota

To Fort Oglethorpe, evacuation hospital, from Camp Gordon, Capt. J. F. McKIE, Wessington.

To Fort Sheridan, Ill., base hospital, from Fort Riley, Lieut. W. P. COLLINS, Howard.

The following order has been revoked: *To Camp Crane, Pa.*, surgical group, from Camp Grant, Lieut. B. H. SPRAGUE, Huron.

Tennessee

To Camp Abraham Eustis, Va., from Camp Sheridan, Lieut. B. F. LORING, Union City.

To Camp Crane, Pa., base hospital, from Camp Lee, Lieut. J. L. BRYAN, Nashville; from Camp Zachary Taylor, Lieut. J. B. BLUE, Memphis. Mobile hospital, from Fort Oglethorpe, Capt. L. A. HAUN, Lieut. J. V. HENDERSON, Knoxville.

To Camp Greene, N. C., base hospital, from Camp Hancock, Lieut. N. H. GOLDBERG, Nashville.

To Camp McClellan, Ala., as sanitary inspector, Capt. J. M. LEE, Nashville. Base hospital, from Fort Oglethorpe, Lieut. S. BURCHART, Memphis.

To Camp Shelby, Miss., base hospital, from Camp McClellan, Lieut. R. M. YOUNG, Knoxville; from Fort Oglethorpe, Lieut. C. M. CHILTON, Memphis.

To Camp Sheridan, Ala., from Fort Oglethorpe, Lieut. J. D. CARLTON, Union City. Base hospital, from Fort Oglethorpe, Lieut. W. N. LYNN, Knoxville.

To Camp Zachary Taylor, Ky., base hospital, for instruction, from Jefferson Barracks, Major G. M. ELLIS, Chattanooga.

To Dansville, N. Y., from New Haven, Lieut. R. H. DENHAM, Lynnville.

To Fort Oglethorpe, evacuation hospital, from Camp Pike, Lieut. D. D. MONCRIEF, Chapel Hill.

To Mineola, N. Y., Hazelhurst Field, for instruction, from Fort Riley, Lieut. P. H. WOOD, Memphis.

To Pine Bluff, Ark., Branch Normal School, Lieut. J. M. GILL, Brownsville.

To Rockefeller Institute for instruction, from New Haven, Lieut. C. L. DAVIDSON, Lexington. For instruction in the treatment of infected wounds, and on completion *to his proper station*, from Fort Crockett, Lieut. J. E. BLAYDES, Nashville.

Texas

To Camp Abraham Eustis, Va., from Camp Custer, Lieut. L. PENROD, Gonzales; from Fort Oglethorpe, Lieut. G. A. PAGENSTECHER, San Antonio.

To Camp Bowie, Texas, Capt. J. A. KYLE, Houston. As sanitary inspector, Capt. T. R. BURNETT, Carrollton.

To Camp Custer, Mich., for instruction, from Fort Oglethorpe, Major G. HAMILTON, Houston.

To Camp Jackson, S. C., from Camp Custer, Lieut. J. H. McCOY, Tahoka; from Fort Oglethorpe, Capt. E. C. FOSTER, Whitt.

To Camp Logan, Texas, to examine drafted men, and on completion *to base hospital*, from Fort Oglethorpe, Lieut. R. W. DUNLAP, Palestine.

To Camp McClellan, Ala., base hospital, from Camp Bowie, Capt. W. W. FITZPATRICK, Paris.

To Camp Shelby, Miss., base hospital, from Camp Bowie, Lieut. C. H. BROOKS, Waco; from Camp MacArthur, Lieuts. E. W. RHEINHEIMER, El Paso; J. C. FALVEY, Humble.

To Camp Travis, Texas, base hospital, from Fort Oglethorpe, Lieut. J. O. BUTLER, Bandera.

To Camp Wheeler, Ga., base hospital, from Camp Shelby, Lieut. J. V. HOPKINS, Victoria.

To Cape May, N. J., base hospital, from Camp Hancock, Lieut. W. L. ASKEW, Amarillo.

To Charleston, S. C., from Camp Travis, Capt. J. M. F. GILL, Austin.

To Fort Bayard, N. M., from Denver, Capt. J. T. BERNARD, Dallas.

To Fort Monroe, Va., from Camp Bowie, Capt. R. E. BLEDSOE, Taylor.

To Fort Oglethorpe, evacuation hospital, from Camp Travis, Capt. T. D. FRIZZELL, Quanah. For instruction, Capt. W. B. HUNTER, Aransas Pass; from Corpus Christi, Lieut. J. D. CARROLL, Uvalde.

To Madison Barracks, N. Y., from Fort Oglethorpe, Lieut. R. E. HILBURN, Antelope.

To Mineola, N. Y., for instruction, from Fort Worth, Lieut. J. W. ELLIS, Killeen.

To New Haven, Conn., Yale Army Laboratory School, for instruction, from duty as a contract surgeon, Lieut. M. D. LEVY, Galveston.

To Rockefeller Institute for instruction, from New Haven, Capt. H. BUCHANAN-KINGSBURY, Fort Worth. For instruction in the treatment of infected wounds, and on completion *to Camp Wadsworth, S. C.*, base hospital, from Fort Oglethorpe, Capt. J. R. KIGHT, San Angelo.

To Tuskegee, Ala., Tuskegee Institute, Lieut. F. D. RAMSEY, Paris.

To Walter Reed General Hospital, Washington, D. C., from Camp A. A. Humphreys, Capt. H. E. REECE, Thayer.

Utah

To Camp Bowie, Texas, as assistant to the division surgeon, Capt. G. W. CLARKE, Springfield.

To Camp Crane, Pa., mobile hospital, from Camp Cody, Capt. C. E. DORLAND, Devils Slide.

To Cape May, N. J., base hospital, from Camp Fremont, Capt. A. R. IRVINE, Salt Lake City.

To Fort Riley for instruction, Lieut. W. T. HASLER, Provo.

To Fort Sheridan, Ill., base hospital, from Camp Cody, Lieut. R. M. BROWN, Ogden.

To report to the commanding general, Southeastern Department, from North Charleston, Capt. W. J. BARDSLEY, Park City.

To Rockefeller Institute for instruction, from New Haven, Lieut. P. S. HAGEMAN, Bingham Canyon.

Vermont

To Camp Jackson, S. C., from Greensboro, Lieut. B. D. COLBY, Sudbury.

To Camp Shelby, Miss., base hospital, from Fort Oglethorpe, Lieut. F. E. STEEL, Jr., Waterbury.

To Fort Ethan Allen, Vt., base hospital, from Camp Devens, Capt. F. E. CLARK, Burlington.

To Rockefeller Institute for instruction, from New Haven, Capt. G. H. PARMENTER, Montpelier.

Virginia

To Camp Bowie, Texas, base hospital, for instruction, from Fort Oglethorpe, Capt. A. L. TYNES, Staunton.

To Camp Crane, Pa., base hospital, from Fort Oglethorpe, Capt. J. C. MOTLEY, Abingdon.

To Camp Sheridan, Ala., from Fort Oglethorpe, Lieut. E. D. WELLS, Clifton Forge.

To Fort Oglethorpe for instruction, Lieut. R. H. BROCKWELL, Barnetts.

To Garden City, N. Y., from Atlanta, Capt. G. ROBERTS, Clarendon.

To Greensboro, N. C., Lieut. J. Q. A. WEBB, Norfolk.

To Rockefeller Institute for instruction, from New Haven, Lieut. C. H. IDEN, Berryville.

Washington

To Boston, Mass., from Camp Custer, Capt. H. A. MOUNT, Waitsburg.

To Camp Fremont, Calif., base hospital, from Camp Lewis, Capt. W. E. JOINER, Seattle.

To Camp Lewis, Wash., Lieut. L. D. LONG, Seattle.

To San Francisco, Calif., Letterman General Hospital, for instruction, from Camp Lewis, Capts. W. S. DURAND, Everett; L. W. RENFRO, Seattle.

West Virginia

To Boston, Mass., for instruction, from Camp Lee, Lieut. R. J. WILKINSON, Huntington; from Camp Zachary Taylor, Lieut. J. C. SCHULTZ, Huntington.

To Camp Crane, Pa., from Fort Oglethorpe, Lieut. H. H. ESKER, Clarksburg. Surgical group, from Camp Beauregard, Lieut. R. U. DRINKARD, Wheeling.

To Camp Dix, N. J., base hospital, from Fort Oglethorpe, Capt. W. L. van SANT, Hinton.

To Camp Greene, N. C., base hospital, from Camp Wadsworth, Capt. M. B. KELLY, Wheeling.

To Camp McClellan, Ala., base hospital, from Camp Mills, Lieut. C. P. BURKE, Follansbee.

To Camp Sheridan, Ala., base hospital, from Camp Gordon, Capt. H. H. YOUNG, Charleston.

To Camp Upton, N. Y., base hospital, from Fort Oglethorpe, Capt. J. D. SCHMIED, New Martinsville.

To Fort Ethan Allen, Vt., base hospital, from Camp Dix, Major L. C. COVINGTON, Charleston.

To Fort Oglethorpe for instruction, Capt. L. K. CRACRAFT, Wheeling.

Wisconsin

To Boston, Mass., from Camp Custer, Lieut J. M. MECUM, Bagley.

To Camp Crane, Pa., base hospital, from Camp Dodge, Capt. E. L. MASON, Eau Claire; from Edgewood, Md., Lieut. W. P. MILLER, Milwaukee. Mobile hospital, from New Haven, Lieut. O. E. ISHMAEL, Mount Horeb.

To Camp Custer, Mich., base hospital, for instruction, from Fort Sheridan, Lieut. T. W. NUZUM, Janesville.

To Camp Fremont, Calif., as assistant to camp surgeon, from Camp MacArthur, Capt. C. M. MEYER, Milladore.

To Camp Joseph E. Johnston, Fla., base hospital, from Camp Jackson, Capt. S. G. PAKE, Hayward.

To Camp Shelby, Miss., base hospital, from Camp Custer, Lieut. R. E. FLYNN, La Crosse.

To Fairfield, Ohio, Wilbur Wright Field, from Mount Clemens, Capt. E. G. FESTERLING, Reedsville.

To Garden City, N. Y., from Americus, Ga., Capt. C. J. ROLLEFSON, Superior.

To San Antonio, Texas, Brooks Field, from San Diego, Capt. F. W. POPE, Racine.

CORRECTION

In The Journal for November 16, under "Commissions Offered and Orders to Duty on Acceptance," the name of E. J. MAIRS of Laredo, Mo., was incorrectly given as E. J. Hairs.

ORDERS TO OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Asst. Surg.-Gen. R. H. CREEL, proceed to Boston, Mass., and Portland, Maine, to investigate administration of quarantine service at those ports.

Asst. Surg.-Gen. H. R. CARTER, proceed to Galveston and Port Arthur, Texas, and New Orleans, to investigate the prevalence of disease in those places.

Surg. J. H. OAKLEY, proceed to Wyandotte, Mich., to investigate the public health value of a contemplated improvement.

Surg. J. W. KERR, return to Las Vegas, N. M., and on completion of work, rejoin station at Ellis Island.

Surg. G. M. CORPUT, proceed to Port Arthur, Texas, to investigate suspected case of yellow fever.

Surg. E. A. SWEET, en route to Washington, stop at Wyandotte, Mich., and Warren, Ohio, to investigate public health value of contemplated improvements.

P. A. Surg. H. F. SMITH, proceed to Washington, D. C., for duty in investigations of the epidemiology of the recent influenza epidemic.

Asst. Surg. H. S. MUSTARD, proceed to Philadelphia for duty with the Emergency Fleet Corporation.

Asst. Surg. R. P. SANDIDGE, proceed from Boston, Mass., to Hartford, Conn., via Fall River, Mass., and to Harrisburg, Pa., for duty in the suppression of the epidemic of influenza.

Asst. Surg. J. S. S. GARDNER, proceed to Warren, Ohio, to investigate the public health value of contemplated improvement.

Asst. Surg. H. E. SETTLE, relieved at Washington, D. C., proceed to Newport News, Va., for temporary duty in relief work.

Asst. Surg. C. E. GIBBS, report at the Hygienic Laboratory for duty in connection with investigations relative to the etiology, transmission and treatment of influenza.

Acting Asst. Surg. J. A. McDONALD, proceed to Houston, Texas, for duty in extracantonment sanitation.

Acting Asst. Surg. BYRON PARKER, proceed to West Point, Ga., for duty with children's bureau in physical examination of adolescent boys.

Acting Asst. Surg. ARTHUR R. PILLSBURY, proceed to Nova Scotia, New Brunswick and Prince Edward Island for the purpose of giving lectures on venereal disease control.

Physiological Pathologist C. W. HOOPER, proceed to Penniman, Va., for duty in investigations of T. N. T. poisoning.

Asst. Epidemiologist J. C. GEIGER, proceed from Washington to New York City for conference, thence to Little Rock, Ark., for duty in cooperation with the state board of health.

Asst. Director Educational Work N. P. GREEN, proceed to New York for conference with various advertising organizations in regard to venereal disease control.

Scientific Asst. GEORGE C. PECK, proceed to Delhi, N. Y., to investigate a dried milk product to ascertain its suitableness for use in the manufacture of reconstructed milk.

Scientific Asst. SAMUEL SAUNDERS, proceed to Raleigh, N. C., for duty in rural sanitation in Wake and Durham counties, N. C.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest; such as relate to society activities, new hospitals, education, public health, etc.)

ARKANSAS

Meeting Deferred.—The officers of the Third District Medical Society have decided to postpone their meeting for this year on account of the disturbed condition of the profession.

Personal.—Dr. James W. Smith, who shot and killed his brother-in-law, Danny Shannon, October 16, was acquitted after four hours' deliberation, November 16, by a jury in Montgomery County, where the case was taken on a change of venue.——Dr. Robert B. Corney, Tucker, for three years penitentiary physician at the state farm, has resigned to enter the military service.

CALIFORNIA

Personal.—Dr. Manzanito B. Bolton, Quincy, has been appointed county physician of Plumas County.——Dr. Ralph L. Larsen, San Francisco, sustained a severe scalp wound and bruises in the overturning of his automobile near Rodeo.

Chinese Herb Man Sentenced.—Tom Shee Binn, whose activities as a practitioner in herbs without the formality of a drug license and who has been brought into police courts many times, is said to have been sentenced to a fine of $350 and to imprisonment for 180 days in jail, November 15. A part of the evidence in which the conviction was made was to the effect that he charged J. A. Dunn $780 for herbs to prevent Spanish influenza, and that Dunn, notwithstanding, died from the disease.

Ask That Physician Be Allowed to Remain.—November 15, the California State Board of Health telegraphed to the Surgeon-General of the Public Health Service protesting against the recall of the physicians attached to the service who were sent into the state to help combat influenza. It was said that conditions had not sufficiently improved to justify their withdrawal. There was general improvement, but a few communities were still asking for assistance. The total number of cases reported to the state board to the date mentioned was 146,023, and 1,761 cases were reported on that date. In San Francisco it was announced by the health officer that the situation would warrant the abolishment of the masks in about a week. There had been 23,409 cases in the city and 1,927 deaths.

COLORADO

Personal.—Dr. J. Wylie Jones, who has been in active service for more than a year and was seriously wounded, is now recovered and returned to duty.

Municipal Sanatorium for Denver.—A communication proposing a municipal sanatorium with a capacity of 100 beds, for Denver, was presented to the mayor and city council by the Denver Anti-Tuberculosis Society, November 12. The communication was referred to the committee on health for investigation. It states that there were in the city in 1917, 645 deaths from tuberculosis; 118 of these were contracted there, and that there were about 3,000 persons in Denver who were suffering from tuberculosis, who were financially unable to secure necessary treatment.

CONNECTICUT

Transfer Feebleminded.—Dr. Charles T. LaMoure, superintendent of the Mansfield State Training School and Hospital, has transferred to that institution the inmates of the former Connecticut School for Feeble-Minded at Lakeville.

State Society Meeting.—The eleventh semiannual meeting of the Connecticut State Medical Society was held at New London, October 3, in connection with the semiannual meeting of the New London County Medical Society. Among the subjects brought up for discussion were: Child Welfare Work and The Tuberculosis Problem in the Army.

Personal.—Dr. Louis J. Pons, Milford, has been appointed medical examiner (coroner) of New Haven County, to succeed Dr. William J. H. Fischer, Milford, who has entered the military service.——Dr. Julius G. Henry, New Haven, has been appointed city epidemiologist.——Dr. Arthur S. McQueen, Branford, has been appointed medical examiner (coroner) for the district, to succeed Dr. Charles W. Gaylord, deceased.

GEORGIA

Personal.—Dr. Lorick T. Pattilo, Moultrie, county health commissioner of Colquitt County, has resigned.

Legislation on Public Health Subjects.—At the last session of the legislature four important health measures were passed. Two of these relate to the prevention of venereal disease, one to the prevention of ophthalmia neonatorum and one to the establishment of sanatoriums for tuberculosis patients in small cities, and jointly by small cities and counties. The first law is entitled "An act to penalize those who solicit for the purpose of prostitution," etc., and makes it a misdemeanor to make any such solicitation by any means whatever or to convey by automobile or otherwise any person in connection with such solicitation. Any one convicted under the act who is operating an automobile or other conveyance for hire immediately forfeits his license for such conveyance, and no license to operate a public vehicle can thereafter be obtained. The second law names syphilis, gonorrhea and chancroid as venereal diseases, declares them infectious, communicable and dangerous to public health, and is entitled "an act relating to venereal diseases, to require the reporting of cases thereof, to penalize those who expose others to infection, to authorize the examination, treatment and isolation of persons infected therewith, to give the health authorities certain power over jails and prisons in connection therewith, to authorize the state board of health to promulgate rules and regulations relating thereto and to declare a penalty for the violation of the provisions of this act, or any rules or regulations prescribed thereunder or any rule or regulation passed and promulgated by the state board of health under the authority of this or any other act." Law No. 3 declares it a misdemeanor for any-person attending a new-born infant to fail to provide prophylactic treatment against gonorrheal infection. The law states that: "it shall be the duty of any person who shall be in attendance on any childbirth to apply to the child such prophylactic treatment as may be prescribed by the state board of health to prevent blindness from gonococcus infection, and that any person who shall nurse or attend any infant shall report any inflammation of the eyes of said child that shall develop within two weeks after birth to the local health officer or to a licensed physician." The law in reference to tuberculosis provides that: "Any cities in Georgia which have a population of not less than 15,000 inhabitants, or any cities of not less than 5,000 inhabitants located in a county which has a population of not less than 25,000 inhabitants, to establish and maintain, either alone or in connection with the county authorities of the county in which such city may be located, may jointly build sanatoriums for the treatment of this disease." The law was greatly needed to encourage the fight against tuberculosis in smaller cities as practically none of these now have means of treating tuberculosis patients locally. The management of the State Tuberculosis Sanatorium at Alto was given to the state board of health instead of to the board of managers originally constituted by the law establishing the institution.

INDIANA

Influenza.—November 20, it was announced that forty-two counties of the state had reported a total of 1,506 new cases of influenza, the largest number reported for twenty-four hours for two weeks. Among the cities reporting a recrudescence of the disease, in some of which the ban either had not been removed or was restored, were Gary, Greensburg, Brookville, Richmond, Logansport, Yorktown, Muncie and West Muncie, South Bend, Anderson, Fort Wayne, Columbia City, Bloomington, Terre Haute, Owensville, Bluffton, Goshen Berne, Wabash, Fairmount and Indianapolis. In a few places improvement is noted.

IOWA

County Election.—At the annual meeting of the Scott County Medical Association, held November 5, in Davenport, Dr. Roscoe P. Carney was elected president; Dr. Thomas D. Starbuch, vice president; Dr. Robert E. Jameson, secretary, and Dr. Sidney G. Hands, treasurer, all of Davenport.

Personal.—Dr. Elizabeth Speers-Gillette, Marshalltown, is reported to have been adjudged insane and committeed to the State Hospital at Independence.——Lieut. Milo O. Brush, Shenandoah, when about to sail for France, fell in New York fracturing his clavicle and is under treatment at the base hospital, Camp Upton.

KENTUCKY

Personal.—Dr. Louis W. Eckels, Jr., has been appointed medical inspector for the health department of Louisville.——J. C. Gilbert, Paducah, has been appointed a member of the state board of pharmacy, succeeding Dr. J. H. Martin, Winchester.

Senior Student Dies.—Kline V. Menefee, a senior student at Ohio-Miami Medical College, Cincinnati, aged 23, who had been working in Cincinnati during the recent epidemic of influenza, died at his home in Covington, November 4, from pneumonia, following influenza.

MARYLAND

Night Clinics at Hopkins.—Cooperating with medical officials of the United States government, night clinics have been inaugurated at the Johns Hopkins Hospital in the interest of social diseases. Tuesday and Thursday are set aside for women, and Wednesday and Friday for men.

Personal.—Dr. Homer E. Tabler, Hancock, is reported to be seriously ill with pneumonia.——At a meeting of the Hagerstown Medical Society, November 14, Dr. William D. Campbell, Hagerstown, was appointed a committee to urge on the mayor and city council the establishment of a thoroughly modern board of health.

Influenza Reappearing.—During the past week, new cases of influenza have made their appearance in Baltimore, in several instances death resulting from pneumonia. However, the number is so far not alarming and has not caused the officials at the health department to feel that there will be a fresh outbreak in the city. They are carefully keeping in touch with the situation to be ready to act in any emergency.

MASSACHUSETTS

Medical Student Dies.—William H. Moynihan, Jacksonville, Fla., a student at the University of Maryland, Baltimore, aged 31, formerly medical superintendent of the department of correction, New York City, and later a resident of Jacksonville, Fla., died in that city, October 15, from pneumonia.

Personal.—Dr. Charles E. Donlan, Boston, was reinstated as superintendent of the Long Island Hospital, November 14, by order of Judge Murley of the East Boston Court, who found that Dr. Donlan had been removed illegally by the infirmary trustees, June 21.——Dr. Anna E. Steffen has been appointed resident physician at the Long Island Hospital, to succeed Dr. Llewellyn H. Rockwell, Boston, resigned to enter the military service.——Dr. William B. T. Smith, Bondsville, sustained a fracture of the skull and internal injuries when his automobile plunged over a 20-foot enbankment, near Palmer, November 9. He is under treatment in the Springfield Hospital.

Child Conservation.—The September-October, 1918, number of *The Commonhealth,* the monthly bulletin of the Massachusetts State Department of Health, is a child conservation number. It contains a series of interesting articles on various phases of child care, including the report of the first year's work of the committee on child conservation of the department, by William J. Gallivan, M.D.; the report of the secretary, Richard M. Smith, M.D.; the report of the child welfare supervisors, by Pansy V. Besom, chief; the report of the child welfare department of the woman's committee of the Massachusetts Council of National Defense, by Gertrude W. Peabody, vice chairman, and the following articles: The Part Good Obstetrics Plays in Child Welfare, by Robert L. DeNormandie, M.D.; Infant Feeding, by Richard M. Smith, M.D.; Diet of Older Children, by Fritz B. Talbot, M.D.; The Care and Development of Children, by J. Herbert Young, M.D.; the Importance of School Hygiene in the Scheme of Child Conservation, by Taliaferro Clark, M.D.; Mental Hygiene for Children, by L. F. Emerson, Ph.D.; The Cost of a Well Baby, by Mary Beard, R.N., besides editorial matter and the usual information about communicable diseases, including venereal diseases, vital statistics, etc.

MONTANA

Chiropractor Convicted.—L. J. Certain, Miles City, charged with practicing osteopathy under and by the name of chiropractic, is said to have been found guilty and fined $200. It was brought out in the trial that the defendant had been given instruction and warning, and had been given every opportunity to obtain a license, but had continued to practice without a license.

Hospital News.—An emergency hospital for the reception of influenza patients was opened in the school house in East Helena, November 9. Nursing is under the care of the local Red Cross officials.——Dr. W. Lynn DuBois has purchased a house in Conrad, which has been remodeled and equipped for a private hospital.——Kalispell has secured the Crescent Hotel as a hospital for influenza cases.——Plans have been drafted by the officials of the state university for the erection of a permanent hospital on the campus at Missoula, with accommodation for fifty patients.

Influenza.—November 18, the secretary of the state board of health reported that there were about 8,000 cases of influenza in the state. The situation was such in some districts that the secretary requested the Surgeon-General to allow to remain the physicians of the service sent to the state to aid in combating the epidemic. The Surgeon-General answered that the physicians might remain until December 1 if necessary. Among the places where the situation was bad was Saco, to which place the secretary of the state board went on the date named to take charge, Butte, Missoula, Malta, Geyser, where a physician was needed, and Helena.

NEW JERSEY

Personal.—Lieut. Joseph Watson Martindale, M. C., son of Joseph Martindale, a Camden physician, was wounded during the offensive at Soisson and is convalescing at the Cape May base hospital.

NEW MEXICO

Public Health Administration.—Under department orders of Sept. 16, 1918, Surgeon J. W. Kerr of the Public Health Service began a survey of sanitary organization and administration in the state with the idea of promoting health matters during the war. In his report in *Public Health Reports*, Nov. 15, 1918, a summary is given of the health laws of the state which shows that while the state board of health was organized and given powers of a character to insure an effective administration of health matters within the state, owing to an absence of appropriations to carry out any health regulations the matter has been entirely neglected, the only work of the state board being the attention given to enforcing the medical practice act. All efforts to enforce sanitary regulations throughout the state, therefore, depend on the local authorities. The report states: Little additional legislation is required except that the laws requiring the reporting of births and deaths should be amended somewhat. As a means of defraying the expenses of keeping these records he suggests that fees for marriage licenses be increased and set aside for this purpose. In a long list of recommendations submitted to meet the urgent need of improved health conditions in New Mexico, the chief features are that the present state board of health and medical examiners be designated in law as a state board of medical examiners and that its duties relate to the enforcement of acts to regulate the practice of medicine; that a state department of health be created to exercise all the powers and perform all the duties in respect to health imposed by law on the present board; that the department of health consist of a commissioner of health and a public health council, the commissioner to be paid an adequate salary and devote his whole time to the work.

NEW YORK

Personal.—Dr. William G. Bissell of Buffalo has been chosen president of the New York State Board of Medical Examiners.

OHIO

Personal.—Dr. R. E. Bushong, for eight years assistant superintendent of the State Hospital, Athens, has been appointed acting superintendent of the Dayton State Hospital, to succeed Dr. Erl A. Baber, Dayton, who has been granted an indefinite leave of absence.——Dr. Amon E. Canfield, Toledo, has been appointed local surgeon for the New York Central Lines at Air Line Junction.

Sanitary Unit Plan Urged.—The state board of health has proposed a method of achieving a rapid improvement of sanitary conditions in crowded industrial localities by the organization of sanitary districts, through which the various units now acting independently may adjust their conditions and proceed with a comprehensive program in which the interests of all will be safeguarded. This plan is especially proposed for the lower Mahoning Valley.

Typhoid Fever in the State.—The reported cases of typoid fever in Ohio, in October, were 324 as compared with 344 in October, 1917, and 757 in October, 1916. The September total for this year was nearly 150 cases greater than for September, 1917. The state health officials consider the educational campaign, to reduce the prevalence of typhoid fever in 1918, practically over. There are now being compiled statistics which will give an accurate report on what has been accomplished.

Influenza.—Recurrent outbreaks of influenza throughout the state, chiefly in the rural districts and smaller places, are attributed by the state health officials to premature relaxation of local closing regulations. These outbreaks after conditions had apparently been restored to normal are delaying the final extinction of the epidemic, which caused, up to November 25, an estimated total of 600,000 cases and 12,000 deaths in Ohio. Among places reporting a recrudescence of the disease in greater or less degree are Portsmouth, Newark, Columbus, Cincinnati, Bellaire and New Philadelphia. At Youngstown and Lima the disease was reported to be abating. Out of 1,000 inmates in the state hospital at Lima there were 217 cases and only seven deaths. In this connection the state health department says the epidemic shows up the weakness of health organization in Ohio. There are too many separate health organizations and not enough cooperation and general supervision. Many small communities, town and country, have health boards and health officers, but are too small to support adequate and efficient health departments. Thus, eighty cities, 700 villages and nearly 1,400 townships have their own health officers, but have no adequate supervision by the state. The remedy is to group small districts into larger ones capable of maintaining adequate health service. In the present epidemic this has caused additional work for the state authorities, with consequent delay, and perhaps needless loss of life.

OREGON

Personal.—Dr. James D. Plamondon, staff physician of the Oregon State Hospital for the Insane, Salem, has been appointed superintendent of the Eastern Oregon Hospital for the Insane, Pendleton.

Academy Meeting.—At the meeting of the Portland Academy of Medicine held, November 14, the system which has made possible the examination of 73,238 drafted men with 504 rejections for tuberculosis was described by Major James Matson, M. C., U. S. Army, of the tuberculosis examination board of Camp Lewis, Washington, D. C. The following officers were elected: president, Dr. Edward P. Geary; vice presidents, Drs. George Ainslie and Albert E. MacKay; secretary, Dr. J. Earle Else, and treasurer, Dr. J. C. Elliott King.

PENNSYLVANIA

Personal. — Dr. Charles M. Rickert, Millersburg, has resigned as assistant chief medical inspector.

State Hospital at Selinsgrove.—A new $1,000,000 state hospital will be erected in Selinsgrove in the spring. The state commission has decided on the immediate purchase of lands held under option for this purpose. Dr. Charles S. Aitkens is chairman of the commission.

Influenza Increasing.—The state department of health, November 21, announced that numerous flare-up cases of influenza have been reported in the last two days and an increased number of deaths have occurred in Erie, Johnstown, New Castle, Uniontown, Wilkes-Barre and Allentown. Steps have been taken to reimpose closing orders. The total number of deaths from influenza and pneumonia since October 1 throughout the state is 42,635.

Personal.—Lieut. Frederick B. Shaffer, Somerset, has been reported wounded in the head.——Lieut. Charles C. Ryan, Republic, Fayette County, has been reported as slightly wounded.——Lieut. William Edwin Park, New Milford, Susquehanna County, has been reported wounded, degree undetermined.——Dr. Charles M. Rickert, Millersburg, has been appointed assistant chief medical inspector of the state department of health, to succeed Dr. John J. Mullowney.——Dr. Silas D. Molyneux, Sayre, began his duties as surgeon-in-chief of the Cottage State Hospital, Blossburg, succeeding Dr. William A. DeWitt, Blossburg, deceased.——Capt. Thomas R. Cagion, M. C., Wilkes-Barre, who was wounded in the knee during the Marne fighting, is returning home and will not be able to resume duty in the war zone for some time.——Dr. Mariam E. K. Frisbie, South Williamsport, has been appointed medical supervisor of the state hospital at Somerset to succeed Dr. John S. Marian, who resigned to enter military service.

Philadelphia

Jefferson Students Drop Barracks.—Acting under permission from the authorities of the War Department, Jefferson Medical College will abandon the barracks program and permit the students to lodge at their fraternity houses and dwellings.

Work of the Pennsylvania Hospital Unit.—The Pennsylvania Base Hospital, Unit No. 10, organized in this city as soon as the United States entered the war and sailed overseas, May 18, 1917, with a personnel of 265 physicians, nurses, attendants and orderlies, has been stationed at Traporte, and has treated 78,000 wounded men with a mortality of only 300.

Personal.—Lieut.-Col. James Reid Martin, M. R. C., with the One Hundred and Ninth Infantry Medical Corps, and a former chief resident physician of Jefferson Hospital, was severely burned about the eyes by mustard gas, September 9, during the defense at Chateau Thierry.——Dr. Cornelius T. McCarthy, first lieutenant, Medical Corps, attached to the British army, is recovering from epidemic influenza, in London, England. He was the first American physician to be honored with the British military cross and has been cited twice by the British government. The second time he received a bar to be attached to the cross. He contracted influenza while taking charge of the base hospital in France.——Dr. Bernard Kohn has qualified before the Civil Service Board for director of Public School Medical Inspectors of the Board of Health.——Lieut.-Col. Richard H. Harte, M. R. C., director of the Pennsylvania Base Hospital, Unit No. 10, one of the first American surgical organizations to arrive in France, has just returned home.——Lieut. Andrew Knox, M. R. C., U. S. Army, has been awarded the military cross for attending wounded under heavy machine gun and artillery fire, during the taking of the city of Lille. Lieutenant Knox was attached to the One Hundred and Fifteenth London Regiment, civil service rifle British Expeditionary Forces, although he was a member of the American Army.

SOUTH CAROLINA

Work on Hospital Building Begun.—Work on the addition to the Greenville City Hospital has been commenced. The building when completed will have cost about $125,000.

SOUTH DAKOTA

District Association.—The Third (Madison) District Medical Society of South Dakota, which was organized, July 31, at Ramona, held its annual meeting at Madison, October 16, and elected Dr. Henry H. Frudenfeld, Madison, president, Dr. Blake S. Allison, Madison, vice president, and Dr. John C. Baker, Ramona, secretary-treasurer.

WASHINGTON

To Fight Influena in Alaska.—The steamer *Spokane* left Seattle, November 19, bearing ten physicians, also nurses and medical supplies for the Alaskans suffering from Spanish influenza. Surg. Emil Krulish, U. S. P. H. S., is in command of the party.

Physicians for Alaska.—November 12, a call was issued to the officers of county medical societies throughout the state for volunteer physicians to go to Alaska to help in caring for influenza patients. The call came from the state commissioner of health and the United States Public Health Service.

Personal.—Dr. Charles S. Bumgarner, Davenport, has been appointed health officer of Lincoln County, to succeed Dr. Orville L. Adams, who has resigned to enter the military service. Dr. Adams is at present ill with influenza at the Deaconess Hospital, Spokane.——Dr. Wilson A. Olds, Jr., Addy, is reported to be critically ill with pneumonia.——Drs. Edward P. M. Condon and J. P. Driscoll, Pasco, who have been ill with pneumonia, are reported to be convalescent.——Dr. James H. Ragsdale, health officer of Wapato, has resigned.

Hospital Allowed to Increase Charges.—As the result of an investigation of facilities for handling industrial accident cases in Seattle and Tacoma, the state medical aid board has ordered a radical readjustment of hospital fees under the first aid law. Instead of the $14 a week formerly allowed hospitals for the state industrial accident cases, the medical aid board is now allowing a charge of $18 a week, and has furthermore authorized the chairman of the board to allow this additional fee in hospital in any other locality operating under similar conditions.

WEST VIRGINIA

Arrests for Narcotic Act Violations.—Dr. Thomas L. Nutter and Chesley R. Peck, Clarksburg, and W. A. Dosman, a druggist, are reported to have been arrested at Clarksburg charged with selling narcotics to addicts. After a preliminary examination they were held under individual bonds of $5,000, before the federal grand jury at the coming term at Philippi.——A physician and druggist of Grafton have also been arrested charged with violation of the narcotic act.

Personal.—Dr. S. Marion Steele has been appointed health officer of Moundsville, to succeed Dr. John H. Luikart, who has resigned to enter the military service.——Dr. John W. Ruckman, Rosbys Rock, is reported to be seriously ill with spinal meningitis following influenza.——Drs. William J. Judy and Claude M. Keever, Belleville, are reported to be seriously ill.——Dr. Herbert E. Sloan, Clarksburg, has been appointed a member of the West Virginia State Health Council, to succeed Dr. Floyd F. Farnsworth, Frenchton, resigned to accept the position of director of the division of venereal diseases in the state department of health.

CANADA

The National Sanitarium Association.—At the beginning of the war the daily average number of patients in the institutions of the National Sanitarium Association of Canada was 485. Today it is 688. The expenditure for maintenance has advanced from $275,000 annually to $510,000; and the cost for the present hospital year will probably amount to $585,000. The per capita cost in the free hospitals in Muskoka and Weston has jumped from $10.50 per week to $14.52 per week.

Personal.—Dr. Malcolm M. Crawford has returned from overseas to Toronto, where he will reengage in private practice.——Col. John T. Clarke of the permanent medical service in Canada has gone to Siberia.——Prof. D. Fraser Harris has completed the history of the medical aspect of the great disaster in Halifax, N. S., Dec. 6, 1917.——Dr. John R. Shannon has been elected surgeon-in-chief of the Manhattan Eye and Ear Hospital, New York. He was formerly of Kingston, Ont.——Dr. C. Denton Holmes, Victoria, B. C., medical officer of the Saanich School Board, British Columbia, has tendered his resignation owing to pressure of work in connection with the Invalided Soldiers' Commission.——Lieut.-Col. Donald McGillivray, Toronto, has resumed private practice. He was latterly on the board of consultants. Lieut.-Col. Harold C. Parsons, Toronto, has succeeded him.——Dr. J. Mair Robertson has ceased to be a member of the Medical Board Center, Vancouver, B. C.——Major Horace W. Coates, C. A. M. C., has severed his connection with the Vancouver Military Hospital and has been appointed sanitary officer for the Vancouver military area.——Lieut.-Col. Cameron A. Warren, Toronto, is in command of the Sixteenth Canadian Field Ambulance with the Canadian Siberian Force.——Capt. Harry Whytock, C. A. M. C., was invested with the Military Cross at Buckingham Palace recently by His Majesty, King George.——The Military Cross has been awarded to Capt. John Gagen Lee, Toronto, now with the Imperial Army, but formerly with the C. A. M. C.

GENERAL

Medical Society Meeting Postponed.—Major James L. Andrews, M. C., U. S. Army, formerly chief of the department of health of Memphis, Tenn., announces that the annual meeting of the Tri-State Medical Society of Arkansas, Mississippi and Tennessee will not be held this year, owing to the war conditions and the outbreak of influenza.

Bequests and Donations.—The following bequests and donations have recently been announced:

The New York Hospital, $25,000 as a memorial to his father, by the will of Gerard Beekman.

Post-Graduate Medical School and Hospital, New York City, $25,000 by the will of Frederick Mead.

The Public Health Association and Influenza.—The American Public Health Association has made exhaustive studies of influenza, fearing the recurrence of the epidemic, and bearing in mind that during the original influenza epidemic from 1890 to 1893, the disease was more severe in the second year than in the first. At the coming annual meeting of the American Public Health Association, to be held in Chicago, December 9 to 12, with headquarters in Hotel Morrison, every effort will be made to bring out all the available information regarding the management of epidemic influenza. Among the papers to be presented at this meeting are the following:

Etiology of Influenza, Major William H. Welch, Baltimore; Dr. William H. Park, New York City; Lieutenant-Commander Keegan, and others.

Mobilization of Medical and Nursing Forces, Asst. Surg.-Gen. Joseph W. Schereschewsky, Pittsburgh; Dr. William C. Woodward, Boston, and others.

Influenza and Pneumonia Vaccines, Dr. Edward C. Rosenow, Rochester; Dr. George W. McCoy, Washington, D. C.; Dr. Timothy Leary, Boston, and others.

The Use of Serums in Influenza, Drs. McGuire and Redden; Dr Herman E. Hasseltine, Washington, D. C., and Dr. Joseph Goldberger, Washington, D. C.

The Face Mask, Col. Charles Lynch, M. C., U. S. Army, and Dr. George H. Weaver, Chicago.

The Value of Open-Air Treatment, Surg.-Gen. William A. Brooks, Boston, Massachusetts State Guard.

Organization of State and Federal Forces in Epidemics, Asst. Surg.-Gen. Albert W. McLaughlin, Chicago, and Dr. Eugene R. Kelley, Boston.

History and Statistics of the Epidemic, Asst. Surg.-Gen. Benjamin S. Warren, Washington, D. C.; Dr. William H. Guilfoy, Dr. W. H. Davis, Dr. Lee K. Frankel, New York City, and others.

Reference committees will be appointed who will report on the various phases of epidemic influenza both at the annual meeting and during the year 1919. While extensively devoted to influenza, the program also contains papers on other aspects of public health; mental hygiene, industrial hygiene, social problems, sanitary engineering, etc.

Child Labor Day.—Child Labor Day will be observed throughout the United States, January 25, in synagogues; January 26, in the churches, and January 27, in the schools, according to a bulletin of the National Child Labor Committee. The Children's Bureau of the Department of Labor is arranging to have reports from its field workers available for programs in churches, schools, clubs and other organizations. In this connection the Children's Bureau has issued a bulletin announcing a Back-to-School Drive, the object of which is to return to the schools and keep there the children who have deserted the schools for industry during the war. The actual work of the drive, it is said, will be done through the Child Conservation Section of the Council of National Defense. Committees are now being formed whose duty will be first to study child labor and school attendance laws, and then get accurate lists of the children who have not returned to school. When the child has been compelled for pecuniary reasons to work, an attempt will be made to provide scholarships averaging about $120 a year, and by other methods funds will be provided to enable the children to continue their school courses. It has been the policy of the federal government to refuse to allow the employment of children under 14 in war work, or children between 14 and 16 on war work for more than eight hours a day and six days a week, or between 7 p. m. and 6 a. m. It is believed they should not be allowed to work in the less essential industries. Inquiries made by the Children's Bureau show that in many of the large cities of the country the percentage of children asking for permits to work has largely increased. In Washington this increase has amounted to 295 per cent., and in Wilmington, 61 per cent.

Third Resuscitation Commission Makes Report.—The third Resuscitation Commission, under the auspices of the Committee on Safety Rules and Accident Prevention of the National Electric Light Association met in New York, May 17, 1918, and has just issued its report. There were present P. A. Surg. E. F. Dubois, U. S. N. R. F.; Mr. W. C. L. Eglin, chairman of the committee of the N. E. L. A.; Drs. D. L. Edsall, Yandell Henderson, Joseph Schereschewsky, U. S. P. H. S., William H. Howell, Reid Hunt, secretary of the commission, and S. J. Meltzer, chairman of the commission; Prof. A. E. Kennelly, professor of electric engineering at Harvard and the Massachusetts Institute of Technology; Prof. G. N. Stewart; Lieut.-Col. E. B. Vedder, U. S. Army; Major F. G. Young, Ordnance Department, U. S. Army; Dr. C. A. Lauffer, medical director of the Westinghouse Company; Prof. E. Thomson of the General Electric Company, and conferees from various other interested organizations. Demonstrations of various methods of resuscitation were given and special devices exhibited.

STATEMENT OF IMPORTANT FACTS

In the discussion following the presentation of methods and evidence to the commission the following important facts were emphasized:

1. That in most accident cases no resuscitation apparatus is at hand for immediate use.
2. That reliance on the use of special apparatus diminishes greatly the tendency to train persons in the manual methods and discourages the prompt and persevering use of such methods.
3. That police officers or physicians often interfere with the proper execution of manual methods, in that they direct that the patient be removed in an ambulance to some hospital, thus interrupting the continuance of artificial respiration.
4. That in many hospitals the members of the staff are not all acquainted with the methods of artificial respiration.
5. That in medical schools instruction is not properly provided for students in the manual methods of artificial respiration.

RESOLUTIONS ADOPTED BY THE COMMISSION

In view of these facts the following resolutions were adopted by the commission.

1. The prone-pressure or Schäfer method of resuscitation is preferable to any of the other manual methods.
2. Medical schools, hospitals, fire and police departments, the Army and Navy, first aid associations, and industrial establishments in general, should be urged to give instruction in the use of the prone-pressure method of resuscitation.
3. Individuals who, from accident or any other cause, are in need of artificial respiration, should be given manual treatment by the prone-pressure method immediately on the spot where they are found. It is all important that this aid be rendered at once. The delay incident to removal to a hospital or elsewhere may be fatal, and is justifiable only where there is no one at hand competent to give artificial respiration. If complications exist or arise, which require hospital treatment, artificial respiration should be maintained in transit, and after arrival at the hospital, *until spontaneous respirations begin*.
4. Persons receiving artificial respiration should, as much as possible, be kept warm and the artificial respiration should be maintained till spontaneous breathing has been permanently restored, or as long as signs of life are present. Even in cases where there is no sign of returning animation, artificial respiration should be kept up for an hour or more.
5. A brief return of spontaneous respiration is not a certain indication for terminating the treatment. Not infrequently the patient after a temporary recovery of respiration stops breathing again. The patient must be watched and if normal breathing stops, the artificial respiration should be resumed at once.
6. Artificial respiration is required only when *natural respiration has ceased*. In cases of simple unconsciousness from any cause in which natural respiration continues, artificial respiration should not be employed without medical advice.
7. The commission recommends that in cases of gas asphyxiation, artificial respiration, whether given by a manual method or by special apparatus, should be combined when possible with the inhalation of oxygen from properly constructed apparatus.
8. With regard to the employment of mechanical devices for artificial respiration the commission feels that it ought not at present take a definite stand, either for or against any particular form of apparatus. However, the commission recommends, that the use and installation of apparatus should be confined, for the present, to properly equipped institutions under medical direction. The commission recognizes the great need of simple devices capable of performing artificial respiration reliably and efficiently. It therefore recommends a careful study of the problem, directed toward *the development of a reliable method appropriate for general adoption.* Such studies can best be carried on in properly equipped hospitals and laboratories which offer opportunities and facilities for critical observation and experimentation.

The commission consists of fifteen members. Fourteen approved the foregoing report without qualifications. The fifteenth member, Dr. Yandell Henderson, wishes to qualify his vote by a special statement:

STATEMENT OF DR. YANDELL HENDERSON

"While I concur in a considerable part of the report of the Resuscitation Commission I dissent from the statement in Resolution 8 recognizing 'the great need of simple devices capable of performing artificial respiration reliably and efficiently.'

"Devices which are excellent from the mechanical standpoint are now available and widely sold; but the evidence regarding them indicates clearly, I believe, that even if these devices were on the spot where several gassings or electrocutions occurred, and if all the victims were treated with them, except one who was given manual (prone pressure) treatment, this one would have much the best chance of recovery. In actual practice the apparatus is seldom right on the spot adjusted and ready. Critical time is lost, and thus in the above supposititious cases, as they actually occur, the only victim with any considerable chance of resuscitation (aside from those who recover spontaneously and are credited to the apparatus) is the one treated manually.

"Even more important is the fact, demonstrated now by universal experience, that when apparatus is known to be obtainable, it is sent for and the manual method neglected. Thus today the apparatus in public use is on the whole contributing very materially to decrease the saving of life."

The committee voted to continue its existence, electing as president, Dr. L. J. Meltzer; vice president, Dr. Yandell Henderson; secretary, Dr. Reid Hunt; treasurer, Mr. W. C. Eglin.

FOREIGN

Ether Day in London.—Ten years ago the trustees of the Massachusetts General Hospital set apart October 16 as "Ether Day" in commemoration of the first public demonstration and practical introduction of anesthesia in surgery. This year the day was celebrated in London by about twenty of the old house physicians and surgeons of the Massachusetts General Hospital who are attached to the various American base hospitals in England. Colonel Washburn, now in charge of American hospitals in England, presided as chairman, and General Winters and Sir William Osler were the guests of honor. Dr. Osler told the story of the introduction of surgical anesthesia. The original papers of Bigelow and Warren and those of William T. G. Morton were exhibited.

Pekelharing Souvenir Volume.—The fiftieth professional anniversary of Prof. C. A. Pekelharing, of the chair of physiologic chemistry and histology at the University of Utrecht, has been celebrated by the issuance of a *livre jubilaire* as the bulky fourth number of the second volume of the *Archives Néerlandaises de Physiologie de l'homme et des animaux*. There are nearly forty articles in the number, most of them reporting results of original research, including Einthoven's "Sur les phénomènes électriques du tonus musculaire," Magnus' article on the muscular reflexes in decerebrated monkeys (in German); De Waard's "Ultrafiltration de petites quantités de liquide par la force centrifuge"; Halliburton's "The Rôle of Fats in Diet"; Beijerinck's report on a new biologic reaction with iron, "Chromogenic Yeasts," and De Haan's "Influence of Calcium Salts on Phagocytosis" (in French).

Fees for Medical Advice by Telephone.—A Netherlands medical journal announces that the physicians of Utrecht have decided to charge half the rates for an ordinary medical call for advice by telephone. The journal insists that this remuneration is not sufficient. The applicant—usually well to do, with his private telephone—is spared the trouble of a call at the doctor's office and waiting in the anteroom, and yet he gets the advice desired. It surely should be left to the physician, it remarks, whether he shall charge according to the service rendered, the half or the full amount of the ordinary office fee. The *Nederlandsch Tijdschrift* comments that however the matter is decided, the discussion will have an educational effect on the public, allowing it to be understood that a telephone call, compelling the physician to get up from his meal, his book, his repose, or his work is not a gratuitous extra but something that has to be paid for. The Prussian tariff recently promulgated provides for fees from about 40 cents to $1.25 for telephone advice.

Professor Henkel Acquitted.—The cable dispatches last August related that Prof. Max Henkel, of the chair of gynecology and obstetrics at the University of Jena, was being tried for the death of a woman on whom he had operated although warned by the nurses that the woman had not been prepared for an operation. He is said to have hastened the operation because a visitor was present, Prince Bernhard of Lippe, a layman, who likes to watch gynecologic operations. The *Nederlandsch Tijdschrift* now announces that the sentence acquitting Professor Henkel stated further "The admittance of lay persons interested in science to witness operations is to a certain degree customary and is not a matter for scandal." The medical faculty at Munich had published a statement taking the opposite view.

Municipal Milk Supply.—According to *Commerce Reports*, owing to the difficulty of securing a sufficient quantity of pure milk at a reasonable price at Wellington, New Zealand, steps have been taken by the city council to handle milk as a municipal undertaking. The council has obtained authority to make the milk business a monopoly in the city. The move is being observed with interest by the dairymen and by other municipalities.

PARIS LETTER

Paris, Oct. 31, 1918.

The Fight Against Influenza

In view of a decided recrudescence of grip of grave degree with bronchopulmonary complications, the minister of the interior has asked the Académie de médecine to appoint a commission which will devise ways and means to combat the existing epidemic of this disease. This commission consists of Professors Netter, Bezançon, Achard, Vincent and Chauffard.

M. Albert Favre, undersecretary of state of the ministry of the interior has sent instructions to all prefects as to the best means for combating the grip. These instructions require that physicians must report cases of grip—a new regulation. If the epidemic continues to progress, all meetings or gatherings of large numbers of people, as in theaters, market places, movies, etc., must be interdicted. But, such measures are not to be taken until consultation is had with the Conseil départemental d'hygiène.

Influenza in Switzerland

Word has been received that the epidemic of so-called "Spanish" grip has broken out with renewed severity at Geneva. Therefore, the Commission d'hygiène has asked the Conseil d'Etat de Genève to close all theaters and movies, and to stop all public gatherings. A certain number of schools have already been closed and several other measures of a general nature have been ordered.

Sanatoriums in the Mountains

In various regions of France great activity has been displayed in the establishment of sanatoria in the mountains for the treatment of tuberculous soldiers. An interesting meeting was held recently in Dauphiné of representatives of several of these zones, on the suggestion of Dr. Perret. The medical profession, the universities and industry were represented at this meeting. The consensus of opinion was that in France locations for sanatoriums may be found that are far more desirable than the mountains of Switzerland (which are too humid), especially the region of the Hautes Alpes in southeastern France. High altitudes are available; the climate is exceptional, dry and sunshiny, like the Mediterranean climate. The commission selected several locations at 1,800 meters altitude.

Announcement is also made of the establishment of a sanatorium at a lower altitude on the plateau of Petites Roches, near Saint Hilaire on the outskirts of Grenoble. This establishment, located at an altitude of 1,100 meters, will be given over for the use of the Association métallurgique et minière contre la tuberculose, an association created under the auspices of the Comité des Forges de France. Mme. la baronne M. de Rothschild has founded at Mégève (département de la Haute-Savoie) a *station de cure* with several hotels, treatment and rest rooms and a *collège sportif* (gymnasium).

French Orthopedic Society

The Société française d'orthopédie has been organized. The president is Dr. Kirmissòn, professor of clinical surgery and diseases of children on the Paris medical faculty, and the vice presidents are Dr. Auguste Broca, professor of operative surgery in the Paris medical faculty and Dr. Dénucé, associate professor in the Bordeaux medical faculty. The secretary-general is Dr. Nové-Josserand, associate professor in the Lyon medical faculty; the treasurer is Dr. Estor, clinical professor of surgery of children and of orthopedics in the Montpellier medical faculty. The first annual meeting of the society will be held in October, 1919, in the buildings of the Paris medical faculty at the same time as the Congrès de chirurgie. The following subjects will be discussed: (1) amputations in relation to subsequent prostheses; (2) spondylitis during the war; (3) treatment of pseudarthroses.

American Red Cross Activities

The American Red Cross has opened a new *Exposition de l'enfance* at Toulouse. At the opening exercises, the mayor of Toulouse, in the name of the city, extended thanks to the United States, and particularly to the American Red Cross which is continuing its beneficent work in France.

Extraction of Intrathoracic Projectiles

So far as intrapleural projectiles are concerned, there is general agreement that they should, as a rule, be extracted, and this rule is practically without exceptions. The discussion held at the recent Congrès français de chirurgie made it clear that this rule does not apply to intrapulmonary projectiles.

Dr. R. Grégoire of Paris extracts all intrapulmonary projectiles because of the complications which they may entail, sooner or later, anatomicopathologic examinations having shown that these foreign bodies are rarely aseptic. On the other hand, Dr. Duvergey of Bordeaux says that some exceptions must be made, depending on the gravity of the general condition of the patient. Dr. Viannay of Saint Etienne is in favor of immediate intervention; he operates as soon as the patient can be made ready, except when the projectile is small, because such do not give rise to any functional disturbance.

Dr. Petit de la Villéon of Bordeaux advises to refrain from operating at advanced stations. He says that surgery of the lung is surgery for base hospitals. Operative procedures at the front should be confined to the toilet of the chest wall, excision of dead tissues and structures, removal of pieces of clothing, excision of the tract of the projectile, reserving the invasion of the lung for a later period, the operation *à froid* being very benign as compared to operation *à chaud*. The conditions are practically the same as in the case of appendicitis—operating not at the height of the attack but during the interval. Whenever the general condition of the patient is not grave, he should be evacuated to the rear. When he arrives at the rear, is it necessary to extract all intrapulmonary foreign bodies? Petit de la Villéon says that the gravity and danger of the operation itself must be considered; all projectiles which can be removed with forceps with the aid of fluoroscopy should be removed. Whenever thoracopneumonotomy is required, it is necessary to decide whether, under the circumstances, it is better to operate or to refrain from doing so. Dr. Rocher stated that it is always difficult to decide on intervention when the intrapulmonary foreign body is small and occasions only slight symptoms, such as dyspnea on effort, or chest pains. If these pains are due to a chronic pleuritis or an intercostal neuralgia, then the extraction of the foreign body will, in all probability, leave the situation unchanged.

Bombardment of Hospitals by the Germans

In a letter addressed to M. Margaine, deputy from the département de la Marne, M. Clemenceau confirms the report that on October 1 a German aeroplane bombarded the hospitals of Châlons. This was not the first time that the enemy had broken the conventions which until then had been observed by all civilized nations, carrying death and destruction into the midst of hospital formations.

In connection with these facts it is interesting to note what was said recently by Mr. Orlando, the Italian premier, in the Italian chamber of deputies, to the effect that during the victorious naval operations at Durrazzo, the Austrian hospital ship had been respected and carefully protected.

Women Physicians Affiliated with the Medical Department of the French Army

Hereafter all French women who possess a medical diploma are eligible to appointment as "doctoresses adjointes au Service de Santé militaire," and will receive the pay, perquisites and allowances of an *aide-major* of the second class—a sublieutenant. Women medical students who have received twelve inscriptions may be appointed "assistantes du Service de Santé militaire," and receive the pay and allowances of a *médecin auxiliaire.* The minimum length of service will be six months, and these appointees will serve under the *médecins-chefs* of their formation, the directors of the Service de Santé militaire, and the superiors of the Service de Santé des armées.

International Scientific Representation

On the initiative of the Royal Society of London, delegates from the scientific academies of the allied countries will soon meet in London for the purpose of outlining the course to be pursued in the future with reference to the cooperation of subjects of the Central Powers in international scientific activities after the war. France will be represented at this conference by MM. Picard and Lacroix, permanent secretaries of the Académie des Sciences, and by MM: Bigourdan, Bailland, Haller, Lallemand and Moureu, members of the same academy.

Establishing a Chair of American Literature at the Sorbonne

In France American literature has been taught by the chair of English literature, never as a separate entity. Now, however, by decree of the minister of public instruction, a separate chair of American literature will be established at the Sorbonne under the professorship of M. Cestre, professor in the University of Bordeaux, and a former student of Harvard University, where he served during the session of 1917-1918 as exchange professor.

French Congress of Surgery

The twenty-seventh Congrès de l'Association française de chirurgie was opened, October 7, under the presidency of Dr. G. Maunoury, surgeon on the staff of the Hôtel Dieu de Chartres. The opening session was presided over by Dr. Louis Mourier, under-secretary of state of the Service de Santé militaire. In his opening address Dr. Mourier thanked the medical corps for its devoted services during the war.

LONDON LETTER

London, Oct. 31, 1918.

A New Medical Department for Dealing with Disabled Soldiers

The number of disabled soldiers discharged from the army under treatment directed by the ministry of pensions now amounts to 30,000. It has been decided to establish a new medical department for the purpose, and Sir John Collie has been appointed medical director. The first step taken by the newly formed department was to complete arrangements with all existing general hospitals that could spare accommodation to provide treatment of the character required. It soon became obvious that this accommodation was insufficient. There are also certain disorders from which the discharged men suffer for which little, if any, accommodation existed. To deal with them it has been necessary to provide and arrange for special institutions. Six homes of recovery for men suffering from neurasthenia and shell shock have already been opened, and three more are being rapidly prepared. These institutions are under the care of specialists on nervous disorders, and every opportunity is given for effecting complete cure. It has been decided that special arrangements must be made for the large number of paralyzed men. For obvious reasons it is undesirable that cases of this sort should be dealt with in general hospitals. Steps, therefore, are being taken to establish in each country, in connection with hospitals, separate institutions where these men will be readily accessible to their friends. It would be an addition to their already grievous plight if they were segregated in one large institution and cut off from personal contact with their friends and relations. These cases require exceptional treatment, and it is hoped, in addition to what the medical department can do in the way of service and allowances, to enlist the sympathies of special committees of influential people who will take a personal interest in providing amusements, entertainments, and the various little luxuries and attention that mean so much to men in this condition. The capitation grants sanctioned by the treasury will cover only the actual cost of the treatment and nursing, which in these cases is very expensive. Special arrangements have been made at most of the spas for the treatment of rheumatic patients, and hostels have been provided and are in the course of provision to accommodate the men. The large number of orthopedic cases (which embrace practically all injuries to limbs) has also necessitated special arrangements. Orthopedic surgery has greatly developed during the war. A scheme is on foot for setting up annexes in connection with the special military surgical hospitals. The treatment of the discharged man in these annexes will be kept entirely distinct from that of the serving soldier, but the supervision of the treatment and the decisions as to operations will be undertaken by the specially skilled staff at the disposal of the War Office. In addition, outpatient clinics for orthopedic treatment of discharged men will be established as occasion requires. It is expected that in each large town of 50,000 inhabitants or more a clinic will be established which will be supervised by surgeons from the special military surgical hospitals. Special aural boards have been established in London and the provinces to regulate the award of pensions and determine the treatment and training to be given men discharged on account of deafness and the various forms of ear disease. Special aural clinics have also been established for giving treatment of this character when it cannot be obtained at hospitals, and classes have been formed to give instruction in lip reading to those who are totally deaf.

Physicians' Action Against the British Medical Association

An important libel action has been decided against the British Medical Association. It was brought by four physicians who claimed damages for conspiracy to injure them in their profession and to libel and slander them. They had been medical officers of the Coventry Provident Dispensary, an approved institution under the national health insurance act of 1911. The members paid a small subscription and in return received from the dispensary medical attendance during illness. The dispensary was begun in 1831, and in 1888 it had 20,000 members. In 1906 the British Medical Association became very hostile to the dispensary on the grounds that canvassing of the public for patients by a collector paid by commission was improper, that the management was too exclusively in lay hands, and that there was no proper wage limit for the subscribers. As a result, five of the medical staff resigned, a new medical club was started under the auspices of the British Medical Association, and an attempt was made to prevent the dispensary obtaining medical service. However, four physicians continued in the employment of the dispensary. The Coventry division of the British Medical Association, supported by the central organization, then endeavored to make things unpleasant for them. Members of the Association were forbidden to enter into professional relations with the medical officers of the dispensary. Thus if the opinion of a consultant was required in a case, the patient had first to discharge the dispensary physician and place himself under an outside one before he could obtain this.

Mr. Justice McCardie delivered a long judgment occupying four hours. He said that it was clear that the aim of the defendants was to inflict professional ruin on any physician who broke the rules of the local body or any rule that might be made by the head body itself. That grave power was used not only against the members of the defendant association but also against those who had never belonged to it. The defendants claimed to enforce by boycott their own standard of medical honor and interest throughout the country. That point was momentous; it touched the vital interests of every physician. He might be exposed to degradation and dishonor at the will of a body that was void of the slightest statutory authority. Such authority was conferred on the General Medical Council, a body of physicians appointed for disciplinary purposes. But the British Medical Association had taken to itself a jurisdiction more far-reaching, and perhaps, more potent than that of the General Medical Council. It entrusted to a large extent the standard of "the honor and interest" of the medical profession to a number of scattered bodies throughout the country, which varied in numbers, inclination, views and self-interest. A branch or division might make a rule to suit its own local pecuniary interest. If such a rule should be broken by a physician, were he a member of the Association or not, he became subject to a declaration that he had acted against the honor and interests of the medical profession. On that declaration there followed a local condemnation, and on that local condemnation there might result a merciless boycott and ruin. What had the plaintiffs done? They had merely accepted posts as the medical officers of a highly respectable and ably managed dispensary on terms that gave them ample remuneration of some $3,000 or $3,500 a year, a full opportunity of private practice, and adequate leisure. Their only fault lay in the fact that this acceptance prevented the local physicians from achieving their wish of either capturing or destroying the Coventry dispensary. The alleged sin was a financial rather than a moral one. The pecuniary interests of the Coventry physicians lay at the root of the matter. The question of ethics—medical or otherwise—had nothing to do with the case; and the assertion that the plaintiffs had been guilty of conduct against the "honor" of the profession could not, in his view, be supported. The honor of the medical profession was amply protected by the wide powers entrusted to the General Medical Council by Parliament. He could not view with favor the assumption by the British Medical Association of a coordinate jurisdiction and the enforcing of the varying views of medical honor with weapons of ostracism, intimidation and threat. The plaintiffs were boycotted and punished and pecuniarily damaged without just cause in law. The plaintiffs did not sin against the "honor" of the medical profession within any fair meaning of that word.

The judge next considered the question of motive and malice in relation to a cause of action based on the pecuniary injury inflicted by the employment of unlawful means. Actual malice was not necessary in such an action for molestation as the present, and it was only necessary to prove the use of illegal means, such as violence or threats. The motives, feelings and objects of the defendants were mixed. Their conduct was doubtless instigated to a large extent by the desire to protect the local pecuniary interests of the Coventry physicians, and the general interests of the profession. But, on the other hand, the defendants were angrily hostile to the plaintiffs. They sought every opportunity of inflicting humiliation, and they evidently wished to render the lives of the plaintiffs unbearable. They desired to do far more than merely to protect their interests. They desired to punish the plaintiffs as a separate end in itself, and they meant to make that punishment bitter to the last degree. The judge gave damages against the association in varying sums for the four plaintiffs aggregating $14,000.

Marriages

CAPT. LAWRENCE LEWELLYN CRAVEN, M. C., U. S. Army, East Penn, Iowa, on duty at Kelly Field, San Antonio, Texas, to Miss Lena L. Newton of Kalamazoo, Mich., at San Antonio, November 14.

MAJOR ELMER ELLSWORTH HEG, M. C., U. S. Army, Seattle, on duty at Camp Jackson, S. C., to Miss Evelyn R. Sampson of White River Valley, Wash., at Seattle, October 14.

RAYFORD KENNEDY ADAMS, Raleigh, N. C., to Miss Mary Belle King, at Charlotte, N. C., November 2.

HARRY IRVING PARTRIDGE to Mrs. Josephine Houkins Jennings, both of Syracuse, N. Y., November 5.

ZACHARIAH BRAINERD, Hunnewell, Mo., to Miss Mona Alexander of Leesburg, Mo., September 13.

GEORGE ELLIOTT EBRIGHT to Miss Florence Braverman, both of San Francisco, November 7.

WILLIAM E. PARKE, to Miss Grace Woods, both of Philadelphia, November 12.

Deaths

Charles W. Brown, Washington, D. C.; Long Island College Hospital, Brooklyn, 1871; aged 72; a member of the Medical Society of the District of Columbia; lecturer on surgery to the Lucy Webb Hayes Training School, and surgeon to the Sibley Memorial Hospital; formerly physician to the Elmira (N. Y.) State Reformatory; health officer of Elmira for two terms; secretary and president of the Tioga County (Pa.) Medical Society; secretary of the Elmira Academy of Medicine; secretary and president of the Third District Branch of the New York State Medical Association; died at his home, November 10, from carcinoma of the stomach and aneurysm of the descending aorta.

Lieut. Ira Condict Whitehead, Jr. ⊕ **M. C., U. S. Army**, Hoosick, N. Y.; Albany (N. Y.) Medical College, 1912; aged 32; who was on duty with the British Expeditionary Forces in Flanders in 1917, and was invalided from there to the Prince of Wales Hospital, London, thence to Osborne House on the Isle of Wight, and then to Netley Hospital, where he was found to be suffering from nerve shock and cholecystitis, and was returned to the United States and placed in the U. S. Army Hospital No. 1, Williamsridge, and honorably discharged on account of physical disability, Aug. 16, 1918; died at his home, October 27, from pneumonia.

Lieut. William Frederic Craig ⊕ **M. C., U. S. Army**, Philadelphia; Medico-Chirurgical College of Philadelphia, 1897; aged 44; a specialist in neurology; for fifteen years professor of biology, anatomy and French in the Central High School; who entered the military service in May, 1917, and was on duty at Camp Oglethorpe, Ga., Camp Weir, and finally assigned to duty with the Three Hundred and Fifteenth Infantry at Camp Meade, Md., and went to France with the Seventy-Ninth Division; was killed, September 26, while caring for wounded soldiers northwest of Verdun, France.

Capt. Henry Guild Burton ⊕ **M. C., U. S. Army** (retired), San Francisco; New York University, New York City, 1869; aged 71; formerly clinical assistant to the chair of ophthalmology in the San Francisco Polyclinic and the Medical Department of the University of California, and assistant surgeon to the Pacific Branch of the National Home for Disabled Volunteer Soldiers, Los Angeles; who entered the Army as assistant surgeon in 1876, and was retired Feb. 5, 1902, on account of disability in line of duty; died, recently, at his home.

Capt. James Frederick Munson ⊕ **M. C., U. S. Army**, Sonyea, N. Y.; University of Michigan, Ann Arbor, 1904; aged 37; for twelve years pathologist at the Craig Colony for Epileptics, Sonyea, and for several years secretary of the National Society for the Study of Epilepsy; formerly assistant in hygiene in his alma mater; died at his station, Plattsburg, N. Y., October 25, from influenza.

George E. Spear, Lincoln, Neb.; University of Nebraska, Omaha, 1903; aged 45; formerly a member of the Nebraska State Medical Association; a member of the Association of Military Surgeons of the United States; a member of the staff of the Ingleside State Hospital from 1905 to 1907; who was shot by a nurse in Lincoln, November 11, died from his wounds, November 12.

Charles Ransom Johnson, Kansas City, Mo.; University Medical College, Kansas City, Mo., 1905; aged 55; assistant to the chair of practice of medicine and assistant demonstrator of anatomy in his alma mater; formerly superintendent of the Kansas City General Hospital and the Leeds Municipal Hospital; died in Grace Hospital, Kansas City, November 10.

Henry E. Jones, Portland, Ore.; Bellevue Hospital Medical College, 1869; aged 80; acting assistant surgeon, U. S. Army; emeritus professor of clinical gynecology in the University of Oregon, Portland; a veteran of the Civil War, in which he served as surgeon in the Confederate Service; died at his home, November 9, from heart disease.

George A. Stewart, Brookport, Ill.; Louisville (Ky.) Medical College, 1889; aged 55; a member of the Illinois State Medical Society; local surgeon to the St. Louis and East St. Louis Suburban Railroad Company; died in Centropolis, Ill., October 31, as the result of rupture of the gallbladder.

Frank Leland Mitchell ⊕ Liberty, Ind.; Central College of Physicians and Surgeons, Indianapolis, 1903; aged 45; while driving in his automobile over the Chesapeake and Ohio tracks, at a grade crossing near Kitchell, Ohio, October 28, was struck by an engine and instantly killed.

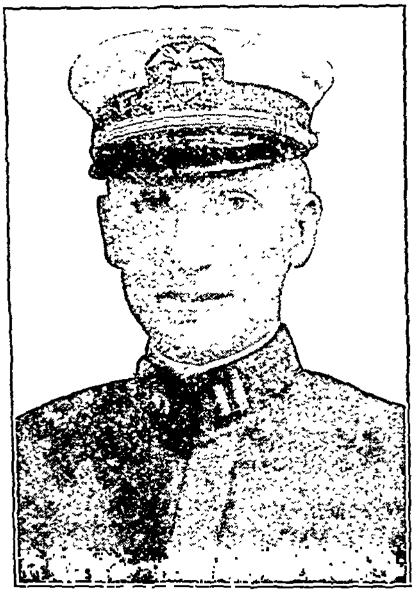
Stanley W. Edwins, Ellwood, Ind.; Cincinnati College of Medicine and Surgery, 1870; aged 82; for several years local surgeon to the Panhandle System; from 1878 to 1882 a member of the state legislature; died at his home, November 16, from the effects of a gunshot wound of the head, self-inflicted, it is believed, with suicidal intent.

Louis N. Wilson, Baltimore; College of Physicians and Surgeons, Baltimore, 1876; aged 66; for thirty-three years a practitioner of Mardela Springs, Md.; formerly a member of the Medical and Chirurgical Faculty of Maryland; died at his home, November 14, from heart disease.

Putnam Dickinson, Des Arc, Ark.; Missouri Medical College, St. Louis, 1880; aged 69; formerly president of the Prairie County Board of Health and vice president of the Prairie County Medical Society; died at his home, November 9, from pneumonia following influenza.

Lieut.-Com. Frank Pennybacker White Hough ⊕ P. A. Surg., U. S. Navy; on duty on *U. S. S. Huron;* University of Virginia, Charlottesville, 1907; aged 34; who entered the Navy, April 11, 1908; died on board the *U. S. S. Huron,* October 27, from bronchial pneumonia.

Charles Pulford Forward, Dubuque, Iowa; Washington University, St. Louis, 1912; aged 29; a member of the Iowa State Medical Society; a specialist in pediatrics; died in Finley Hospital, Dubuque, November 11, from influenza.



Died in the Service
LIEUT. WILLIAM H. BUFFUM, M. C., U. S. NAVY, 1877-1918
(See The Journal, last week, p. 1760)

Thomas Rutherford Savage, New York City; College of Physicians and Surgeons in the City of New York, 1874; aged 66; physician to the French and Presbyterian hospitals, and to the outpatient department to St. Luke's Hospital; died at his home, November 12.

John William Batte, Nashville, Tenn.; Jefferson Medical College, 1846; aged 95; for fifty-four years a practitioner of Pulaski, Tenn.; died in St. Thomas' Hospital, Nashville, from the effects of concussion of the brain sustained in a street car accident, October 21.

Frank E. Lewis Brecht ⊕ Buffalo; University of Buffalo, N. Y., 1872; aged 73; a member of the Buffalo Academy of Medicine; assistant health physician of Buffalo during the smallpox epidemic of 1872; died at his home, October 29, from influenza.

Lieut. Oscar Miller Klingen ⊕ M. C., U. S. Army, Minneapolis; University of Minnesota, Minneapolis, 1916; aged 29; who went to France with Base Hospital No. 26, in June, 1918, died at his post, October 16, from pneumonia following influenza.

Isaac H. Lent, Middletown, N. Y.; Albany, (N. Y.) Medical College, 1873; aged 72; a member of the Medical Society of the state of New York; consulting ophthalmologist to Thrall Hospital, Middletown; died at his home, about October 20.

Lieut. Arthur Morgan Evans ⊕ *M. C.*, U. S. Army, Chicago; University of Illinois, Chicago, 1916; aged 28; died in Evacuation Hospital No. 21, Camp Custer, Battle Creek, Mich., October 5, from cerebrospinal meningitis.

Julius H. Ruhl, Galveston, Texas; University of Texas, Galveston, 1899; aged 40; a member of the State Medical Association of Texas; demonstrator of obstetrics in his alma mater; died at his home, November 10.

Chadwick Evans Arnold, San Jacinto, Calif.; Cooper Medical College, San Francisco, 1901; aged 41; formerly in the United States Indian Service; died at his home, November 7, from pneumonia following influenza.

James Walter G. McLaughlin ⊕ Georgetown University, Washington, D. C., 1908; aged 35; director of the State Bank of Beaver Falls; died at his home, November 10, from pleuropneumonia following influenza.

Clifford F. Morell, Brainerd, Minn.; University of Minnesota, Minneapolis, 1914; aged 31; a member of the Minnesota State Medical Association; died at his home, November 13, from pneumonia following influenza.

Lieut. Francis Marion Burkhalter ⊕ M. C., U. S. Army, Ray City, Ga.; Atlanta (Ga.) School of Medicine, 1909; aged 31; who arrived in France, July 20, died there on October 8, from lobar pneumonia.

David Q. Will, Moore's Store, Va.; Maryland Medical College, Baltimore, 1902; aged 40; a member of the Medical Society of Virginia; died at his home, November 13, from pneumonia following influenza.

Capt. Lawrence Edward Flannagan ⊕ M. C., U. S. Army, Charlottesville, Va.; University of Virginia, Charlottesville, 1884; aged 54; died at his home, about November 6, from pneumonia following influenza.

William Hampton Caldwell, Houston Heights, Texas; Baltimore (Md.) College, 1883; aged 60; a member of the staff of St. Luke's Hospital, Houston; died at his home, November 10, from pneumonia.

Pierre Leonard Couillard, Manchaug, Mass.; Montreal School of Medicine and Surgery, 1875; aged 68; a member of the Massachusetts Medical Society; died at his home, October 11, from pneumonia.

Edward A. Hudson, Edison, Neb.; Missouri Medical College, St. Louis, 1890; aged 51; a member of the Nebraska State Medical Association; died in Cambria, Neb., October 7, from cerebral hemorrhage.

Alfred Marius Wang ⊕ Minneapolis; Northwestern University Medical School, Chicago, 1886; aged 57; attending physician to St. Mary's Hospital, Minneapolis; died at his home, November 13.

Samuel Berlin, Brooklyn; Long Island College Hospital, Brooklyn, 1916; aged 26; a member of the staff of Fordham Hospital; died at Fort Slocum, N. Y., October 16, from bronchial pneumonia.

James Frankland Boyle, Edmonton, Alta.; University of Toronto, Ont., 1896; L.R.C.P., L.R.C.S., Edinburgh, L.R.F.P. and S., Glasgow, 1903; aged 46; died, recently, in Edmonton, from influenza.

Horace Charles Newbury, Chicago; University of Pennsylvania, Philadelphia, 1918; aged 24; an intern at the Ravenswood Hospital; died, November 19, from pneumonia following influenza.

Edward Everett Hamblen, Bedford, Mass.; Tufts College, Boston, 1898; aged 53; a member of the Massachusetts Medical Society; town physician of Bedford; died at his home, November 10.

C. A. Edwards, Doerun, Ga.; Atlanta (Ga.) Medical College, 1898; a member of the Medical Association of Georgia; died at his home, about November 8, from pneumonia following influenza.

William L. Creswell, Danbury, Iowa; State University of Iowa, Iowa City, 1903; aged 40; died in St. Vincent's Hospital, Sioux City, Iowa, October 22, from pneumonia following influenza.

Aaron Dudley French, Allendale, Ill.; Barnes Medical College, St. Louis, 1904; aged 42; a member of the Illinois State Medical Society; died at his home, October 17, from pneumonia.

Daniel W. Jones, Princess Anne, Md.; Jefferson Medical College, 1848; aged 95; for several years chief judge of the orphan's court of Somerset County; died at his home, November 12.

Nathan Kendall Mills ⊕ Odanah, Wis.; St. Louis University, 1911; aged 36; government physician at Odanah; died at that place, November 9, from pneumonia following influenza.

Dolphus L. Stevens ⊕ Foreman, Ark.; College of Physicians and Surgeons, Little Rock, Ark., 1910; aged 35; died at his home, October 24, from pneumonia following influenza.

Frederick William Cuyler Lockwood, Greenwich, Conn.; Eclectic Medical College of the City of New York, 1885; aged 62; also a druggist; died at his home, November 13.

Edward Kennedy Henderson, *Haliburton, Ont.*; University of Toronto, 1909; aged 30; medical officer of the Haliburton County Battalion; died at his home, about November 10.

James Todd Duncan ⊕ Toledo, Ohio; Northwestern University Medical School, Chicago, 1905; aged 41; died at his home, October 24, from pneumonia following influenza.

William F. Holden, Winona, Minn. (license, exemption certificate, Minnesota, 1883); aged 67; a practitioner for forty-six years; also a druggist; died at his home, October 30, from organic heart disease.

John Galbraith Martin, Anton Chico, N. M.; Washington University, St. Louis, 1904; aged 35; a member of the New Mexico Medical Society; died, about November 10.

Sebastian Keller, Spokane, Wash.; University of Wurzburg, Germany, 1854; aged 88; for thirty-six years a practitioner of West Bend, Wis.; died at his home, November 3.

Charles Raymond Atzen, Omaha, Neb.; John A. Creighton Medical College, Omaha, 1915; aged 27; died at his home, November 2, from pneumonia following influenza.

Alva W. Wilder, Fort Smith, Ark.; Atlanta (Ga.) Medical College, 1884; aged 59; at one time a member of the Arkansas Medical Society; died at his home, November 14.

Walter Booker England ⊕ Huntsville, Ala.; University of Tennessee, Nashville, 1904; aged 35; died at his home, October 12, from pneumonia following influenza.

Lucien Clyde Davis, Lakewood, Wis.; Ensworth Medical College, St. Joseph, Mo., 1903; aged 40; died at his home, about November 2, from lobar pneumonia.

Zachariah Brainerd, Hunnewell, Mo.; University of Missouri, Columbia, 1885; aged 57; died at his home, November 2, from pneumonia following influenza.

Charles Anthony Ordway ⊕ Everett, Mass.; Dartmouth Medical School, Hanover, N. H., 1896; aged 44; died at his home, September 24, from influenza.

Henry James Brugge, Grass Range, Mont.; Rush Medical College, 1897; aged 42; a member of the Medical Association of Montana; died, about October 20.

Lieut. Arthur Hastings Wheeler ⊕ **M. C., U. S. Army,** Albany, N. Y.; Albany (N. Y.) Medical College, 1912; aged 30; died in California, October 26.

Aurelius Augustine Lyon, Nashville, Tenn.; Washington University, St. Louis, 1861; aged 80; Confederate veteran; died at his home, November 6.

James Thomas Wadkins, Union City, Ga.; Chicago College of Medicine and Surgery, 1913; aged 36; died at his home, October 28, from influenza.

Charles A. Boyce, McLean, N. Y.; University of Syracuse, N. Y., 1879; aged 63; died in his home, November 12, from organic heart disease.

William H. Johnson, Barry, Ill.; Missouri Medical College, St. Louis, 1879; aged 63; died in Barry, November 7, from cerebral hemorrhage.

Theodore Lamkin ⊕ Bellamy, Ala.; Birmingham, Ala., Medical College, 1910; aged 39; died in Selma, Ala., October 28, from pneumonia.

Charles Edgar Walker ⊕ Charlotte, N. C.; University of Maryland, Baltimore, 1891; aged 51; died suddenly at his home, November 8.

Isaac W. Starr, Brownsville, Ore.; Willamette University, Salem, Ore., 1877; aged 64; died at his home, November 2, from heart disease.

Stanley Miller Martsolf ⊕ Westover, Pa.; University of Pittsburgh, 1902; aged 41; died in the Clearfield, Pa., Hospital, October 28.

Clifford Alfred Chance ⊕ Madrid, Iowa; Drake University, Des Moines, Iowa, 1911; aged 38; died at his home, recently, from pneumonia.

Patrick Joseph McNulty, Glenlyon, Pa.; University of Louisville, Ky., 1907; aged 42; died at his home, October 28, from influenza.

William Bray Warner ⊕ Red Bank, N. J.; New York University, New York City, 1882; aged 58; died at his home, September 1.

William Bowman, Marion, Ind. (license, Indiana, 1903); aged 70; died in a sanatorium in Indiana Harbor, Ind., November 6.

Howard H. Hopkins, New Market, Md.; University of Maryland, Baltimore, 1869; aged 70; died at his home, October 16.

Edgar L. Bay ⊕ Eddyville, Iowa; Marion-Sims College of Medicine, 1899; aged 45; died at his home, October 31, from influenza.

Robert Reginald Krueger ⊕ Vestaburg, Pa.; University of Pittsburgh, 1916; aged 29; died at his home, November 10.

James L. Brown ⊕ Peoria, Ill.; Medical College of Ohio, 1868; aged 77; died at his home, November 8.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

BEER AND CANCER CURES

Did the Brewing Interests Advertise Autolysin?

Our readers may remember that an article appeared in this department of The Journal for July 6, 1918, under the title "Henry Smith Williams and 'Proteal Therapy.'" "Proteal Therapy" is a treatment exploited by Henry Smith Williams, M.D., of New York, for use in tuberculosis, cancer, rheumatism, etc. It is apparently a modification of the "Autolysin" cancer "cure" which Williams had previously puffed in *Hearst's Magazine.*

The Journal's article pointed out that Henry Smith Williams, although entitled to write "M.D." after his name, is essentially a journalist. He has written voluminously for some years in lay publications on various subjects, both under his own name and under his *nom de plume,* "Stoddard Goodhue, M.D." In addition, Williams runs a publishing concern called the Goodhue Company, which issues a number of books, many of them being reprints of Williams' own articles.

Closely associated with Henry Smith Williams is his brother, Edward Huntington Williams, who also is a prolific writer. The Journal's previous article called attention to the fact that there had been sent broadcast to physicians a neat little cloth-bound book, entitled, "Alcohol, Hygiene and Legislation." This book, which evidently cost somebody a good deal of money to distribute gratis, was published by the Goodhue Company, and was written by Edward Huntington Williams. Enclosed with the book was an advertising leaflet on the "Autolysin" cancer cure and also a letter from the Goodhue Company, asking physicians to accept it "with our compliments and the compliments of the author." The letter was chiefly devoted to calling attention to Henry Smith Williams' "new book, the Autolysin Treatment of Cancer." The last thirteen pages of the book "Alcohol, Hygiene and Legislation" contained advertisements of the Goodhue Company's publications, particular emphasis being placed on the "Autolysin Treatment of Cancer," by Henry Smith Williams.

So much by way of retrospect. Now comes information that may throw an interesting side-light on the matter just presented. There is at present being conducted by a committee of the United States Senate, an investigation relative to the purchase of a Washington (D. C.) newspaper with money alleged to have been furnished by those interested in the brewing industry.

At the opening hearing before the Senate Committee, Tuesday, November 19, the secretary of the United States Brewers' Association, after admitting that brewers' propaganda had been published in the *International Monthly,* edited by Viereck (of the *Fatherland*), also declared that the Publication Committee of the brewers' association employed writers to "write up certain subjects" relating to the brewers' trade. One of the writers mentioned in this connection was, according to the newspaper reports, "Dr. Edward H. Williams, author of articles published in medical and other journals."

With this fact before us, it seemed worth while to go through the book that had been distributed so lavishly to physicians with the compliments of the Goodhue Company and Dr. Edward Huntington Williams, in the exploitation of "Autolysin," and Henry Smith Williams' book on the subject.

The first chapter of "Alcohol, Hygiene and Legislation" consists of a reprint of an article from the *New York Medical Journal* of May 8, 1915. The article is a skilful presentation of the case for the defenders of the lighter alcoholic beverages, especially beer. This chapter and all succeeding chapters of the book attempt to discredit prohibitory legislation, and argue that prohibition drives the public to the use of the more ardent alcoholic beverages, while preventing the use of the milder beverages, such as beer, which one is led to infer is not particularly harmful. Throughout the book, also, the state of Kansas is held up as an example of the harm done by prohibition, and the theme is developed that insanity and the use of cocain and other habit-forming drugs follows in the wake of prohibition. The following extracts are from Chapter I:

> The evil effects of *beer* and wine, for example, are greatly less than those produced by spirituous liquors. . . . [Italics ours.—ED.]
>
> If our theory of immunity is correct we should expect to find that the older beverages, such as *beer* and wine, which have been used for thousands of years, are less productive of alcoholic insanity, for example, than the spirituous liquors which are recent innovations. In point of fact we find this to be the case: the spirituous liquors are almost wholly responsible for all forms of alcoholic insanity. [Italics ours.—ED.]

Chapter II is a reprint of an article that appeared in *Everybody's Magazine*, August, 1914, and deals with "Legislation from a Medical Viewpoint." It is to the effect that drug addictions and insanity, together with special forms of mental diseases directly attributable to alcoholism, seem to flourish best in prohibition territory.

Chapter III deals with "The Peace and War Footing of Alcohol," and is a reprint from the *Medical Record*, Aug. 7, 1915. It, too, sings the praises of the "lighter beverages," while deprecating the use of "ardent spirits." For instance:

> An overwhelmingly large proportion of persons who develop alcoholic psychoses in America are drinkers of whisky, or some corresponding ardent spirit, whereas this condition is seldom seen in *beer* and wine drinkers. [Italics ours.—ED.]
>
> Thus we find the highest percentage of alcohol psychoses among the whisky-drinkers who come from western Europe, while the wine and *beer* drinking races of central and southern Europe show a distinctly lower percentage, in some instances only about one-fourth as many per thousand. [Italics ours.—ED.]

Chapter IV deals with "Some Aspects of Liquor Legislation." Like Chapter II it is an indictment of prohibition, and the United States Census Bureau's reports are called on to sustain this thesis. Quotations, too, are made from the writings of Henry Smith Williams further to prove the point. "Dry" Kansas and "wet" Nebraska are frequently compared, to the detriment of the former. One who accepts the statements in this chapter will get the impression that Kansas has more lawlessness, illiteracy, pauperism, and insanity than Nebraska.

Chapter V deals with "The Problem of Legislation." It is based on the premise that "prohibition does not prevent the consumption of liquor," but on the contrary, "prohibitive legislation induces the consumption of the most harmful form of liquors." Stated in another way, it is equivalent to charging that prohibition is hard on the brewers, but beneficial to the distillers. In fact, E. H. Williams, in another book ("The Question of Alcohol"—Goodhue Co.) which also champions the case for the milder alcoholics, quotes Henry Smith Williams as saying, relative to prohibitory legislation: "In general, it would appear that, if our legislators of recent years had been in league with the distiller, they could not have served his purpose better."

Whether or not Edward H. Williams' or Henry Smith Williams' conception of the alcohol problem is good, bad or indifferent, need not at this time concern us. The medical profession, however, has a right to ask two questions: First, Is the Dr. Edward Huntington Williams who wrote "Alcohol, Hygiene and Legislation" the "Dr. Edward H. Williams" who was employed by the brewers to write propaganda favorable to the brewing interests? Second, Was the cloth-bound book, "Alcohol, Hygiene and Legislation," which was distributed by the Williams brothers, paid for, wholly or in part, by the United States Brewers' Association?

For those who wish to read Dr. Edward Huntington Williams' opinions on the alcohol question, the following bibliography may be of service:

"Liquor Legislation and Insanity": *Medical Record*, 1913, lxxxiv, 791.
"The Liquor Question in Medicine": *Medical Record*, 1914, lxxxv, 612.
"Inebriety as a Medical Problem": *Post-Graduate*, 1914, xxix, 603.
"The Problem of Inebriety": *N. Y. Medical Journal*, 1915, ci, 940.
"Aspects of Inebriety in Alcohol": *British Journal of Inebriety*, 1915-1916, xiii, 9.
"The Peace and War Footing of Alcohol": *Medical Record*, 1915, lxxxviii, 226.
"Alcohol and Therapeutics": *Medical Record*, 1917, xcii, 666.

Correspondence

A PRELIMINARY REPORT OF A STUDY OF THE COAGULABILITY OF INFLUENZAL BLOOD

To the Editor:—During the recent influenza epidemic, one of the most striking symptoms was an almost constant occurrence of hemorrhage. Nosebleed was present nearly always in children, and often in adults. Some of the women had menorrhagia and metrorrhagia, and abortion was frequent. We observed one case with hemorrhage from the bladder and two with hemorrhage from the bowels. The cerebrospinal fluid contained blood in two cases in which lumbar puncture was performed for a suspected meningitis. Bleeding from the gums was common, and several young patients developed hemorrhagic purpura. A majority of the so-called pneumonia patients coughed up bright red blood, some of them dying suddenly from asphyxiation due to active hemorrhage. Sudden death came to one convalescent patient from what was, clinically at least, a hemorrhage in the brain.

The regularity with which these various hemorrhages appeared suggested the possibility of there being a change in the blood itself, and accordingly we tested the coagulation time of blood taken from a large number of influenza and pneumonia patients. In every case tested, without a single exception, the coagulability of the blood was lessened, the increase in time required for coagulation varying from two and one-half to eight minutes more than the normal. Blood was tested as early as the second day of influenza, and as late as the twentieth day of convalescence from pneumonia, with the same results. A sufficient number of controls were tested to establish the normal coagulation time for the tests used. Several local physicians also tested blood from their patients, and, while our records are at this time necessarily incomplete, we have yet to receive a report of a case in which the time of coagulation was not prolonged.

With a view toward lessening the tendency to hemorrhage, we started the early use of large doses of calcium lactate, which apparently gave good results. There also seemed to be less bleeding in the pneumonia patients who took calcium iodid to control their cough. We arrived at our conclusions too late in the epidemic to try horse serum or similar coagulating agents, but we believe that in a certain type of pneumonia, or what would be better called hemorrhagic bronchitis, their use would have been justified.

We have no theory to account for the increased coagulation time of influenzal blood. Possibly the presence of *Streptococcus hemolyticus* may be responsible; but as the lessened coagulability appears early while the red cell count remains nearly normal, it would seem that the first change is in the serum rather than in the corpuscles.

We submit this incomplete report in the hope that others may be sufficiently interested in this apparently overlooked feature of influenza to check our findings.

A. W. ERSKINE, M.D., and B. L. KNIGHT, M.D.,
Cedar Rapids, Iowa.

ROENTGEN FINDINGS IN THE PNEUMONIAS FOLLOWING INFLUENZA

To the Editor:—The roentgen examination of the chests of influenza patients during the recent epidemic revealed some very interesting conditions. The cases were not selected to any great extent. The diagnosis of pneumonia, as a rule, was made clinically, and the roentgen ray was used only as corroborative evidence and to determine the extent of involvement. The striking feature was the apparent difference in opinion as to the type, whether lobar pneumonia or bronchopneumonia.

When seen early, the patients presented a rather marked peribronchial infiltration of the larger trunks, with a local or general mediastinitis. The lung structure appeared normal and the movements of the diaphragm were unimpaired. This pathologic condition either became stationary with a corresponding improvement in the clinical symptoms or there was a rapid progression out into the lung structure with the development, as a rule, of a bronchopneumonia.

In a few instances, the pneumonia was lobar, being confined to one or more lobes. In some cases the infection was so severe that a general pulmonary edema developed with almost complete obliteration of the normal chest shadows. Associated with this severe pulmonary edema was an effusion into the pericardial sac. In examining these cases roentgenographically an attempt was made to follow the regular routine, which consisted of fluoroscopy first, and then the making of plates. Some patients were so very ill that only a minimum amount of observation could be attempted. On fluoroscopy in the mild cases one was struck with the density of the hilum shadows and the marked infiltration of the larger bronchi with an increase in the mediastinal density. In these cases the movements of the diaphragm were unimpaired. In the definite pneumonias the findings would be as above with a bronchopneumonia involving both lungs, as a rule, although a number of cases of unilateral bronchopneumonia were observed.

In these cases the movements of the diaphragm were unimpaired unless the infection was very extensive. These cases at times were so severe that the entire chest became involved, with here and there small islands of apparently normal lung tissues. It was remarkable to see these patients and wonder how they could possibly breathe. A great number of cases of lesser severity were noted. Those that were definitely lobar pneumonia showed involvement of one or more lobes, usually beginning in the lower right. They appeared to be less toxic and were easier to handle. The respiratory movements were always rapid, and the movements of the diaphragm on one or both sides were impaired, and frequently fluid was found in the pleural cavity.

This type of pneumonia was the exception. In these conditions the heart was of interest. In the severe cases of pulmonary edema the heart shadow was obscured, owing to the edema and the fluid in the pericardial sac. A number of hearts in the bronchopneumonia types appeared distinctly bottle shaped. On repeated observations this was found to be due, not to fluid in the pericardial sac, but to a degeneration of the heart muscle with dilatation. In the lobar pneumonias the heart was found, as a rule, enlarged, and was a striking feature along with the impairment of the movements of the diaphragm.

Multiple abscess formation in the lobular type and empyema in the lobar type were also observed, although the latter was not nearly so frequent as in the pneumonias of last fall. Another feature worthy of note was the apparent similarity of these bronchopneumonias to the findings in an acute pulmonary tuberculosis. It would be impossible from roentgen examination alone to differentiate these cases, even after apparent recovery from the pneumonia.

It is with a great deal of hesitancy that we should diagnose cases of tuberculosis in individuals who have had influenza or influenzal pneumonia, even months after apparent recovery. In a limited number of cases bronchiectasis was noted, nearly always unilateral and mostly confined to the lower right chest.

Harry F. Friedman, M.D., Chelsea, Mass.
Lieutenant, Junior Grade, U. S. N. R. F.; Roentgenologist,
U. S. Naval Hospital.

"STUDIES OF ROENTGENOGRAMS OF THE ACCESSORY NASAL SINUSES"

To the Editor:—In The Journal, Nov. 9, 1918, p. 1555, Dr. Max Unger of New York, in a preliminary note, describes an alleged new method for the study of the nasal accessory sinuses with the roentgen rays.

As a matter of fact, this method was described very accurately by Dr. George E. Pfahler of Philadelphia, in an article published in the *Laryngoscope*, July, 1916. Every detail mentioned by Dr. Unger appears in Dr. Pfahler's original paper, with considerable enlargement. The only variation in the method consists in the exact size of the film that is used. Dr. Pfahler even described the possibility of cocainization of the pharynx in some hypersensitive patients. He also mentioned the advantages of the method in studying the relations of the floor of the antrum to the neighboring teeth.

Since the publication of this method by Dr. Pfahler, it has been used very generally by roentgenologists throughout the country. I myself have employed it several times.

The method is mentioned on page 208 of Knox's "Radiography," second edition.

Dr. Unger states that his report is a preliminary one and deals only with the use of this method on the cadaver. Yet this is a method that has been in general use on living patients for some time.

Isaac Gerber, M.D., Providence, R. I.

[A proof of the preceding was sent to Dr. Unger, who replies:]

To the Editor:—I wish to acknowledge with chagrin that Dr. Gerber is correct. My claim to originality was made in good faith since a roentgenologist with whom I discussed the method knew nothing of it and the literature consulted did not contain it. I missed the line in Knox's "Radiography" that mentions this method. May I congratulate Dr. Pfahler on devising such an excellent method.

Max Unger, M.D., New York.

SPENCER'S CHLORAMINE PASTILLES

To the Editor:—I notice on the market in local drug stores an article made by "John Wyeth & Son, Sole Proprietors, Philadelphia," labeled "Spencer's Chloramine Pastilles" and recommended for "influenza" and other (similar) conditions. It is further stated that "as the name indicates," these pastilles are made up of *ammonium chlorid* and other substances (which are named), and contain opium.

In view of the fact that "chloramin" is the accepted name of p-toluene sulphochloramid, and that this substance has been recommended for use as a throat spray in connection with the present epidemic of influenza, it seems as though the "chloramine pastilles" were likely to deceive the public, and result in greater, rather than less danger to the people who do not know the nature of these substances, or their relative value.

Should not this be called to the attention of the medical profession, and if possible, of the general public?

S. C. Brooks, Boston.

[Comment.—The term "chloramin" is applied to a class of chemical compounds that contain group :NCl. The chloramin derivative sodium paratoluenesulphochloramid has been called chloramin-T, the "chloramin" indicating the characteristic NCl group, and the "T" the derivation from toluene. Sodium parabenzenesulphochloramid has been called chloramin-B, the "B" indicating its origin from benzene. Before chloramin-T and the related products came into use in medicine, John Wyeth and Brother had registered the term "chloramine" as a trademark for a pharmaceutical preparation which in no sense is a chloramin. This misuse of a chemical term is to be regretted, and indicates the need for a revision of our trademark law which permitted the registration of this evidently misleading term.—Ed.]

Native Customs and Cancer.—In parts of China where the head is shaved by public barbers, the razors used are often dull and full of nicks, and the irritation of this scraping often causes cancer. Chinese men suffer from cancer of the pharynx and esophagus due to their habit of eating very hot rice, which is thrown into the mouth forcibly with chop sticks. Chinese women eat after their lords and masters, when the rice is cold, and they never have this kind of cancer. In India much cancer is caused by the chewing of betel nut. In some parts of the country women do not chew the nut, and are free of cancer of the mouth. In Khurdistan, India, the natives wear baskets filled with hot coals across their abdomens to protect them from the cold, and more than 50 per cent. of all the cancer in that region forms in the abdomen and groin, while in other countries such cancers are very rare.—Major W. J. Mayo, War Department Lectures.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alabama: Montgomery, Jan. 14. Chairman, Dr. S. W. Welch, Montgomery.

Arizona: Phoenix, Jan. 7. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.

Colorado: Denver, Jan. 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Delaware: Wilmington, Dec. 10-12. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

District of Columbia: Washington, Jan. 14-16. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

Florida (E): Jacksonville, Dec. 16-17. Sec., Dr. G. A. Munch, 1806 Franklin St., Tampa.

Florida (R.): Miami, Dec. 2-3. Sec., Dr. W. M. Rowlett, Citizens Bank Bldg., Tampa.

Hawaii: Honolulu, Jan. 6. Sec., Dr. J. R. Judd, Honolulu.

Illinois: Chicago, Dec. 9-11. Mr. F. C. Dodds, Supt. of Registration, Springfield.

Iowa: Des Moines, Dec. 10-12. Sec., Dr. G. H. Sumner, Capitol Bldg., Des Moines.

Louisiana: New Orleans, Dec. 2-4. Sec., Dr. E. W. Mahler, 730 Audubon Bldg., New Orleans.

Minnesota: Minneapolis, Jan. 7-10. Sec., Dr. Thomas McDavitt, 741 Lowry Bldg., St. Paul.

New Mexico: Sante Fe, Jan. 13. Sec., Dr. W. E. Kaser, East Las Vegas.

North Dakota: Jan. 7. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.

Ohio: Columbus, Dec. 3-5. Sec., Dr. H. M. Platter, State House, Columbus.

Oklahoma: Oklahoma City, Jan. 7-8. Sec., Dr. J. J. Williams, Weatherford.

Oregon: Portland, Jan. 7. Sec., Dr. H. S. Nichols, Corbett Bldg., Portland.

Pennsylvania: Philadelphia, Jan. 7-9. Sec., Mr. Nathan C. Schaeffer, State Capitol, Harrisburg.

Rhode Island: Providence, Jan. 2-3. Sec., Dr. B. U. Richards, State House, Providence.

South Dakota: Pierre, Jan. 14. Sec., Dr. P. B. Jenkins, Waubay.

Utah: Salt Lake City, Jan. 6. Corres. Sec., Dr. G. F. Harding, 405 Templeton Bldg., Salt Lake City.

Virginia: Richmond, Dec. 10-13. Sec., Dr. J. W. Preston, 215 S. Jefferson St., Roanoke.

Washington: Spokane, Jan. 5. Sec., Dr. C. N. Suttner, 415 Old Nat'l Bk. Bldg., Spokane.

Wisconsin: Madison, Jan. 14. Sec., Dr. J. M. Dodd, 220 E. 2d St., Ashland.

California June Examination

Dr. C. B. Pinkham, secretary of the Board of Medical Examiners of the State of California, reports the written examination held at San Francisco, June 25-27, 1918. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 166 candidates who took the physician's and surgeon's examination, 125, including 25 osteopaths, passed, and 41, including 32 osteopaths, failed. Two candidates were licensed on Army and Navy credentials. Fifty-two candidates were licensed through reciprocity and 3 candidates were granted osteopathic reciprocity licenses. Of the 9 drugless healers examined, 8 passed and 1 failed. Ten candidates were granted licenses to practice chiropody. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
California Eclectic Medical College	(1914)	75.2
College of Medical Evangelists	(1918)	82.5, 83.2, 86, 86.9, 87.1, 87.8, 88.3, 88.5, 89.1, 89.2, 90.5, 91.5, 91.5, 91.7, 91.8, 92.5, 92.8, 93.5, 94.2, 94.8.
College of Physicians and Surgeons, Los Angeles	(1918)	75, 75, 75.3, 75.8, 76.3, 76.4, 79.2, 79.7, 80.5, 81, 81.2, 82.3, 83.1, 83.2, 84, 86.3, 86.9 89.8, 89.9, 90.1, 90.1, 91.5, 94.2.
College of Physicians and Surgeons of San Francisco	(1915)	76.1; (1917) 82, (1918) 79.4, 80.7, 81, 82.7, 85.9, 86.3, 87.8, 88, 91.3, 91.9, 94.
Hahnemann Medical College of the Pacific	(1918)	76.3, 77.5, 80.7, 83, 90.5, 93.3.
Leland Stanford Junior University	(1916)	91.2; (1917)*; (1918) 88.5, 92
Oakland College of Medicine and Surgery	(1918)	85.2, 86, 90.3.
University of California	(1918)	84.1, 85, 87, 87.5, 89.4, 89.7, 89.8, 89.9, 89.9, 90.3, 90.3, 90.5, 92, 92.1, 92.1, 92.9, 92.9, 93.3, 94, 94.3, 95.3.
Atlanta Medical College	(1916)	79.1
Chicago College of Medicine and Surgery	(1917)	87.9, 92.7
Rush Medical College	(1917)	92.2
Johns Hopkins University	(1918)	89
Harvard University	(1882)*; (1916) 92.8; (1918)	95.4
Jefferson Medical College	(1918)	90.5
Licentiate of the Royal College of Physicians, London, and a Member and Licentiate of the Royal College of Surgeons, England	(1914)	89.2

FAILED

College	Year Grad.	Per Cent.
College of Physicians and Surgeons, Los Angeles	(1918)	67.7, 69.9
College of Physicians and Surgeons, San Francisco	(1918)	63.2, 69, 71.9.
Hahnemann Medical College of the Pacific	(1918)	67.9, 71.1
Medical College of Virginia	(1917)	70.5
Tohoku Imperial University Special Medical Dept.	(1915)	69.9

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
California Eclectic Medical College	(1903) (1913)	Nevada
College of Physicians and Surgeons of San Francisco	(1904) (1911)	Nevada; (1916) Oregon.
Gross Medical College	(1899)	Colorado
George Washington University	(1916)	Nebraska
Bennett Medical College	(1914)	Missouri
College of Physicians and Surgeons, Chicago	(1904)	Iowa
Hahnemann Medical College and Hospital of Chicago	(1896)	Illinois
Northwestern University Woman's Med. School	(1893)	Wisconsin
Rush Medical College	(1868) Minnesota; (1910)	Illinois
Woman's Medical College	(1889)	Illinois
Indiana Medical College (Purdue Univ.)	(1906)	Indiana
State College of Phys. and Surg., Indianapolis	(1907)	Indiana
Drake University	(1912)	Iowa
Keokuk Medical College, Coll. of Phys. & Surg.	(1902)	Iowa
	(1908)	S. Dakota
State University of Iowa College of Medicine	(1910)	Iowa
Kentucky University	(1903)	Iowa
Louisville National Medical College	(1898)	Indiana
Johns Hopkins University	(1912)	Washington
University of Maryland	(1909)	N. Carolina
Harvard University	(1915) Massachusetts; (1915)	New York
Michigan College of Medicine	(1884)	Michigan
Hamline University	(1902)	Minnesota
American Medical College	(1890)	Nebraska
Beaumont Hospital Medical College	(1897)	New Mexico
Ensworth Medical College	(1910)	Nebraska
Kansas City College of Medicine and Surgery	(1917)	Arkansas
Marion-Sims Beaumont Medical College	(1901)	Ohio
St. Louis College of Physicians and Surgeons	(1910)	Missouri
St. Louis University	(1904)	Washington
Washington University	(1905) (1911)	Missouri
Columbia College in the City of New York	(1896)	New York
Toledo Medical College	(1912)	Ohio
Hahnemann Med. Coll. and Hosp. of Philadelphia	(1902)	New York
Jefferson Medical College	(1883) Pennsylvania; (1905)	Minnesota
University of Pittsburgh	(1909)	Penna.
Woman's Medical College of Pennsylvania	(1901)	Virginia
Meharry Medical College	(1916)	Tennessee
University of Nashville	(1901)	Indiana
Marquette University	(1909)	Wisconsin
Wisconsin College of Physicians and Surgeons	(1912)	Oklahoma
University of Toronto	(1888) Illinois; (1908)	Washington
University of Turin	(1914)	New York
Kumanota Special Medical School	(1909)	Arizona

* No grade given.

Iowa September Examination

Dr. G. H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, Sept. 10-12, 1918. The examination covered 8 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 9 candidates examined, 8 passed and 1 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Howard University	(1918)	77.1
Bennett Medical College	(1914)	88.6
Northwestern University	(1918)	79.2, 86.2
Rush Medical College	(1918)	91.1
University of Illinois	(1918)	88.2
Albany Medical College	(1895)	87.2
Columbia University	(1901)	92.9

FAILED

College	Year Grad.	Per Cent.
College of Physicians and Surgeons, Keokuk	(1880)	39.9

Dr. Sumner also reports that 6 candidates were licensed through reciprocity at the meeting held Sept. 8, 1918. The following colleges were represented:

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Yale University	(1909)	Missouri
Chicago College of Medicine and Surgery	(1911)	Illinois
Chicago Homeopathic Medical College	(1903)	Illinois
Ensworth Medical College	(1902)	Nebraska
Miami Medical College	(1893)	Missouri
University College of Medicine	(1896)	Virginia

Nebraska June Examination

Dr. J. J. Hompes, secretary of the Nebraska State Board of Medical Examiners, reports the oral, practical and written examination held at Lincoln, June 3-5, 1918. The examination covered 14 subjects. An average of 75 per cent. was required to pass. Of the 45 candidates examined, 44 passed and 1 failed. Twenty-one candidates were licensed through reciprocity. Four candidates were granted reregistration certificates. The following colleges were represented:

College — PASSED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1917)	81
John A. Creighton Medical College	(1918)	77, 77, 80, 80, 80, 81, 82, 82, 83, 86, 86, 86, 88, 88, 90, 90.
University of Nebraska	(1918)	80, 80, 81, 81, 83, 83, 83, 83, 84, 85, 85, 85, 85, 86, 86, 86, 86, 87, 88, 89, 89, 89, 89, 90, 90, 94.
Eclectic Medical College	(1918)	81
FAILED		
Loyola University	(1917)	59

College — LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Bennett College of Eclec. Med. and Surg.	(1905)	Illinois
Bennett Medical College	(1915)	Illinois
Chicago College of Med. and Surg.	(1912) Illinois; (1913)	Iowa
Chicago Physio-Medical College	(1891)	S. Dakota
College of Phys. and Surg., Chicago	(1908) Iowa; (1910)	Kansas
University of Illinois	(1914)	Illinois
Keokuk Medical College	(1894)	Missouri
Tulane University	(1898)	Georgia
St. Louis College of Physicians and Surgeons	(1898)	Missouri
Washington University	(1906) Iowa; (1911)	Missouri
John A. Creighton Medical College	(1901) Iowa; (1917)	U. S. Navy
Columbia University	(1903)	New York
Cornell University	(1917)	U. S. Navy
Cleveland Homeopathic Medical College	(1908)	Ohio
University of Cincinnati	(1915)	Kansas
Medico-Chirurgical College of Philadelphia	(1897)	Penna.
University of Pennsylvania	(1915)	N. B. M. Ex.

Oklahoma July Examination

Dr. J. J. Williams, secretary of the Oklahoma State Board of Medical Examiners, reports the written examination held at Oklahoma City, July 9-10, 1918. The examination covered 10 subjects and included 100 questions. An average of 70 per cent. was required to pass. Six candidates, including 1 osteopath, were examined, all of whom passed. Sixteen candidates, including 7 osteopaths, were licensed through reciprocity. Seven candidates were granted reregistration licenses. The following colleges were represented:

College — PASSED	Year Grad.	Per Cent.
George Washington University	(1917)	83
College of Physicians and Surgeons, Chicago	(1905)	89
Rush Medical College	(1913)	84
Maryland Medical College	(1910)	84
Meharry Medical College	(1918)	71

College — LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Atlanta Medical College	(1895)	Texas
Bennett Medical College	(1915)	W. Virginia
Kentucky School of Medicine of Louisville	(1898)	Kentucky
University of Louisville	(1908)	Arkansas
National University of Arts and Sciences	(1918)	Missouri
University Medical College of Kansas City	(1897)	Missouri
John A. Creighton Medical College	(1913)	Nebraska
New York University	(1896)	Missouri
Memphis Hospital Medical College	(1894)	Texas

Georgia October Examination

Dr. C. T. Nolan, secretary of the Georgia State Board of Medical Examiners, reports the written examination held at Atlanta, Oct. 8-9, 1918. The examination covered 10 subjects and included 100 questions. An average of 80 per cent. was required to pass. Of the 8 candidates examined, 7 passed and 1 failed. Nine candidates were licensed through reciprocity. The following colleges were represented:

College — PASSED	Year Grad.	Per Cent.
Emory University	(1918)	88.6, 90.8
Southern College of Medicine and Surgery	(1913)	82
University of Illinois	(1916)	85.7
Columbia University	(1917)	91.5
Meharry Medical College	(1916) 82.5; (1918)	82.1
FAILED		
Southern College of Medicine and Surgery	(1913)	75.2

College — LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Birmingham Medical College	(1915)	Oklahoma
University of Alabama	(1910)	Alabama
Atlanta Medical College	(1892)	Alabama
Louisville Medical College	(1886)	W. Virginia
Baltimore Medical College	(1896)	Mass.
Eclectic Medical Institute	(1888)	Indiana
Vanderbilt University	(1917)	Tennessee
University of Vermont	(1918)	Vermont
University of Virginia	(1913)	New Jersey

Book Notices

DISPENSARIES: THEIR MANAGEMENT AND DEVELOPMENT. A Book for Administrators, Public Health Workers, and All Interested in Better Medical Service for the People. By Michael M. Davis, Jr., Ph.D., Director of the Boston Dispensary, and Andrew R. Warner, M.D., Superintendent of Lakeside Hospital, Cleveland. Cloth. Price, $2.25. Pp. 438. New York: The Macmillan Company, 1918.

The first dispensary in this country was started in 1786. What a difference between that primitive institution, managed entirely by one charitably inclined doctor dispensing drugs to perhaps sixty or seventy poor persons during the year, and the great modern dispensary with its scores of employees and its large medical staff, representing all departments of the science, and handling hundreds of patients daily. From a single little room, or perhaps only a desk, in the back of an apothecary shop, the dispensary has grown until it has become one of the largest and most important factors in present day social economics. How this growth has taken place and the various factors that have been instrumental in bringing the dispensaries up to their present high state of development have been most interestingly and instructively presented by the authors in this volume. They likewise discuss in a comprehensive manner the proper management of modern dispensaries, from the small dispensary handling only a few cases daily, or the special dispensary with but a single class of cases, to the great general dispensary, with its many clinics, handling 100,000 or more cases annually. Every phase of the subject, including the financing of such institutions, the question of free and pay patients, efficiency tests, the follow-up system, and social service in all its departments, is covered in a very thorough manner. Not only physicians but those laymen who are interested in the great problems of public health will find in this excellent volume much that is of interest and also of great value.

HYGIENE OF THE EYE. By William Campbell Posey, A.B., M.D., Ophthalmic Surgeon to the Wills and Howard Hospitals. Cloth. Price, $4 net. Pp. 344, with 120 illustrations. Philadelphia: J. B. Lippincott Company, 1918.

This volume contains twenty chapters treating of the ocular structures; visual physiology; refraction and glasses; strabismus; the influence of diseased eyes on the body; school life; artificial and natural lighting; school architecture; the most noticeable diseases of the eye; wounds and injuries; the effects of drugs and beverages on the eyes; color blindness; what to do for the blind; conservation of vision, etc. It is well written and produced. The author's name is a sufficient guarantee of its scientific quality. In paper, printing, etc., it is a physical demonstration of how books may be produced and read with as little injury to the eye as possible. The volume is hardly written for specialists, but it will be found an exceedingly useful book for general practitioners who wish to review the subject and become familiar with facts they should know about the eye. It will also be an extremely valuable book for those members of the laity who desire to keep in touch with this important subject. It can be especially recommended to teachers, nurses, and those who direct hygienic conditions of shops, factories, etc.

GYMNASTIC TREATMENT FOR JOINT AND MUSCLE DISABILITIES. By Brevet Col. H. E. Deane, R. A. M. C. In Charge War Hospital, Croydon. With Preface by Temp. Colonel A. Carless, Army Medical Service and Brevet Lieut.-Col. F. W. Mott, F.R.S., R. A. M. C. (T.) Maudsley Hospital, Denmark Hill. Cloth. Price, $2.50 Pp. 146, with illustrations. New York: Oxford University Press, 1918.

In this little book the author sketches his method of gymnastic treatment of joint and muscle disabilities among wounded soldiers, employing apparatus of the simplest sort, and having in view always the quickest possible return of the man to his military duties or, if permanently invalided, to the best possible working and earning condition. While giving due credit to massage, passive motion, either manual or mechanical, he deprecates the prolonged keeping of these patients under such treatment, and insists that much time is wasted; frequently the patient is hospitalized and allowed to deteriorate, when by proper gymnastic methods not only is he educated in the "will to do" for himself, but practical and remarkable improvement is quickly arrived at by the method he teaches. Every detail of the gymnastic methods employed should be familiar to the one who attempts to apply them. They are simple but effective. The author says that "all the apparatus necessary to cultivate any movement which a soldier is likely to want, and on which work can be adjusted to suit any man fit for exercise at all, are a skipping rope, Indian clubs, dumb-bells, a beam, a slanting ladder, a sparred plank, parallel bars, wall bars, ropes and a nautical wheel," all of which apparatus in use are pictured in the book. The principle constantly emphasized is to have the patient do something for himself, employing the simple apparatus named, together with other calisthenic and gymnastic movements, games, etc., aiming at perfect anatomic results, but being satisfied with compensatory movements, in some cases, that are practically as good.

The Doctor's Part: What Happens to the Wounded in War. By James Robb Church, A.M., M.D., Colonel, Medical Corps, U. S. Army. With Foreword by Major-General William C. Gorgas, Surgeon-General, U. S. Army. Boards. Price, $1.50 net. Pp. 284, with illustrations. New York: D. Appleton and Company, 1918.

It is a pleasure at these times to read a book that describes the care of the wounded in France without emotion or sensationalism. Colonel Church is well prepared to write such a book. He has served for twenty years in the Army. In the war with Spain he was with the rough riders, and won the medal for gallantry under fire. He also served on the Mexican border. Early in 1915 he was sent to France as medical military observer. As such he was admitted to the inner medical circles everywhere, and was even able to get into the front trenches. He writes, therefore, as one who speaks with knowledge gained from actual observation and from personal experience. The work amounts to a description of the physician's part in the care of the wounded from the trench and battle field to the first-aid station on through the field, evacuation, base, general and special hospitals. One might suppose that such matter would make tedious reading; but Colonel Church has the happy faculty of making an interesting story out of what might ordinarily be regarded as a dry subject, especially by laymen. Interspersed all along are little incidents and stories of human interest, amusing episodes and withal glimpses of tragedies. His descriptions of conditions met with—of the hospitals, of the physician's life at the front, etc.—are graphic and illuminating. The book is written for the layman in nontechnical language, but certainly this does not detract from its interest for physicians. Colonel Church has a distinct literary touch of which few physicians can boast. Thus he has put life into a dry subject and the result is a book full of information of practical value that is as interesting to read as a novel.

The American Hospital of the Twentieth Century. A Treatise on the Development of Medical Institutions, Both in Europe and in America, Since the Beginning of the Present Century. By Edward F. Stevens, Architect. Cloth. Price, $5. Pp. 274, with illustrations. New York: Architectural Record Publishing Company, 1918.

The author, an architect, devotes his time exclusively to hospital construction, and has compiled an interesting book showing the rapid developments in hospital planning and construction in this country. He pictures and describes many of the world's greatest hospitals abroad as well as hospitals of every size and specialty in this country, the final chapter being concerned with military hospitals of the present war. The book is profusely illustrated. In the period of construction and reconstruction that will now take place, works of this character should be of great service to those planning new medical institutions.

Diseases of the Heart: Their Diagnosis, Prognosis, and Treatment by Modern Methods, with a Chapter on the Electro-Cardiograph. By Frederick W. Price, M.D., F R.S., Physician to the Great Northern Central Hospital, London. Cloth. Price, $7.50. Pp. 472, with 246 illustrations. New York: Oxford University Press, 1918.

The object of this book as stated in the preface is to include information with regard to recent advances in the study of cardiac disorders, as well as an account of our knowledge prior to this; and by discussing both from the point of view of the clinician, to enable the medical practitioner to take the fullest possible advantage of modern methods in the diagnosis, prognosis and treatment of diseases of the heart. This purpose has been as well accomplished as could be expected in a volume of 436 pages of text. About one half is taken up with a consideration of the more modern aspects of cardiology, such as the newer conceptions of the irregularities, the polygraph and the electrocardiograph. An intimate familiarity with these subjects is revealed and the topics are well handled. The same may be said of the discussion of the so-called older or better known diseases of the heart, such as the valvular lesions, and diseases of the myocardium, pericardium, etc. The author has the knack of crowding a good many facts into small space so that the book is really a reliable condensed compendium of knowledge of heart disease. Many polygraphic and electrocardiographic tracings elucidate the text.

Social Medicine, Medical Economics and Miscellany

The Stimulating Effect of Nutrients

F. G. Benedict and T. M. Carpenter in Publication 261 of the Carnegie Institution of Washington (1917) give the results of an extensive series of observations with human subjects on the influence of the ingestion of food on metabolism, with special reference to the stimulating effect of nutrients. The conclusions drawn from the various groups of experiments have been stated by the authors in abstracts as follows: (1) The work of mastication, such as would be involved in chewing gum or a rubber stopper continuously, may require an increment in the heat production of approximately 17 per cent. (2) The ingestion of water with a temperature of either 22 C. or 55 C. produces no significant increment of the basal metabolism, if not over 500 gm. of water are taken. With larger amounts of cold water there may be an increase which, in certain instances, has been found to amount to 16 per cent. above the basal value. (3) Coffee, owing probably to its caffein content, acts as a stimulus to the metabolism. Approximately 325 gm. of coffee at a temperature of about 60 C. will produce an increment in the metabolism of 8 to 9 per cent. (4) Beef tea, taken either hot or cold, slightly increases the metabolism. (5) With carbohydrates the basal metabolism may be increased to an average maximum of approximately 25 per cent. by the ingestion of 100 gm. of any one of several sugars, although levulose and sucrose appear to exert a somewhat more powerful influence than the other sugars. This increment occurs inside of two hours and the metabolism has a tendency to return to the base line somewhat rapidly thereafter. (6) The ingestion of a diet containing a preponderance of fat produces a positive increment in the metabolism, although this increment is considerably less than that observed with an equivalent amount of energy in either carbohydrate or protein. (7) The ingestion of protein in almost any quantity invariably produces an increase over the basal heat production, which may be 25 per cent. for several hours, and for short periods may rise to 45 per cent. No definite mathematical relationship between the amount of protein ingested and the increment in the total metabolism could be established in these experiments. No clearly defined difference between the animal and vegetable proteins was found in their influence on the metabolism. (8) The experiments with mixed diets, especially those with excessive amounts of food, showed that it was possible by the ingestion of a large meal to stimulate the metabolism to 40 per cent. above the basal value for a number of hours, and to 20 per cent. for at least eight hours; indeed, there was every reason to believe that the stimulus to the metabolism would have been found to continue considerably longer than the experimental period of eight hours if the observation had been prolonged. The "cost of digestion," or the mathematical relationship between the fuel value of the intake and the increase in heat production due to the ingestion of food, is estimated with carbohydrates to be not far from 6 per cent. on the average; with fat the increase is about 2 per cent. of the fuel value of the intake, with a protein-rich diet approximately 12 per cent., and with mixed diets 6 per cent.

Medicolegal

Quarantine of Communicable Diseases [*]

A decision by the supreme court of the State of Washington, Aug. 27, 1918, in effect prohibits the release on habeas corpus of a person detained in quarantine by order of the boards of health of Seattle and the state. This person, arrested for disorderly conduct, had been examined by the health commissioner of Seattle in accordance with an ordinance, found to have syphilis, and sent, in accordance with another ordinance, to an isolation hospital for detention and treatment. He had appealed to the state board of health as provided by law, but the finding of the commissioner had been affirmed. He then petitioned the state supreme court for a writ of habeas corpus, and the superior court for King County was instructed by the latter to inquire into the time and cause of his detention. The superior court issued an order to have him examined before it, and thereupon the health commissioner applied to the supreme court for a writ restraining further proceedings on the ground, among others, that an order of the health commissioner could not be reviewed by the court.

The detained person contended that to deny him such a review was to suspend the writ of habeas corpus, and that the actions and findings of boards of health were open to judicial inquiry the same as other boards, institutions and officers. Bailey (Habeas Corpus, Sec. 106) was quoted to the effect that the determinations of such boards "are not final and conclusive; if they were, then the exercise of such summary power could not be upheld."

In its decision the supreme court states that to follow Bailey would be to make the exercise of the police power a judicial function and holds that:

> A writ of habeas corpus is a writ of right, and is never to be denied in any case where the liberty of the subject is made the subject of inquiry. But it has always been held that a return showing a legal cause for the detention of a petitioner is enough to suspend the operation of the writ. . . . Where the police power is set in motion in its proper sphere, the courts have no jurisdiction to stay the arm of the legislative branch of the government, for it is operating in its own particular field, where even the courts are powerless to insist upon a procedure consistent with the forms of the common law. Some courts have held that the discretion and judgment of administrative officers, while very broad, is not absolutely and in all cases beyond judicial control, but the tendency is away from this doctrine, for, granting the right to question means and methods in one case, the questions of fact upon which the administrative order is based might be raised in every case, and the object of the law, which is to deal summarily, to the end that imminent peril to the public may be averted, would be wholly overcome. At any rate, a somewhat extended exploration of the books convinces the writer that a court should not inquire into the reasonableness of an ordinance sounding in the police power in any case where the legislative body has provided the means and methods of carrying it out.

In substantiation of this view, the court cites previous decisions by the Washington Supreme Court and a number of decisions by the United States Supreme Court in regard to the examination or quarantine of immigrants, one of the latter holding that:

> Where a statute gives a discretionary power to an officer, to be exercised by him upon his own opinion of certain facts, he is made the sole and exclusive judge of the existence of those facts, and no other tribunal, unless expressly authorized by law to do so, is at liberty to reexamine or controvert the sufficiency of the evidence on which he acted.

Some additional points were raised by counsel in the case, notably the question of the constitutionality of the quarantine law, which leaves to the boards of health definitions and classification of diseases to be quarantined. In regard to this point the supreme court said:

> This court has not heretofore considered similar laws as a delegation of legislative power or authority. The legislation is that of the legislative body, but it is not always practical to meet every phase of the necessity that has called for the law by the enactment of a general statute. . . . Nor is there any legal reason for denying the power to quarantine summarily, or to restrain for treatment, a citizen or subject because the authority may be abused or the law maladministered in a given case.

One of the points made by the commissioner was that he could not bring his ward into court for examination without subjecting himself to the penalties of the quarantine law; but the supreme court held that "if the court has jurisdiction to inquire into the cause of his detention, resort to examination and expert opinion by those skilled in the diagnosis of disease would not be a breaking of the quarantine."

The contention of the detained person, that the city of Seattle had no authority to pass health ordinances or to create the office of health commissioner, was overruled by the supreme court.

Presumption as to Fit Condition of Person to Use Bath

(Warren v. Werther (N. Y.), 169 N. Y. Supp. 709)

The Supreme Court of New York, Appellate Division, First Department, in reversing a judgment that was rendered in favor of the plaintiff for damages for burns sustained after he became unconscious in the hot room in taking a Turkish bath, but without any negligence on the part of the defendant being proved, holds that when a person apparently in good health and condition presents himself for the use of the accommodations provided in a public bath, the proprietor thereof is justified in believing that the patron is in fit condition to use the bath, knows what he is about, and can safely be permitted to make use of the bathing privileges as ordinarily conducted. The contention that the defendant was liable for failure to supply the plaintiff with medical attendance, after the accident, the court answers by saying that there was no proof in the case that the injuries were in any way aggravated by the tardiness of the medical attendance, nor in fact did the record justify even an inference that the plaintiff was not furnished with medical attendance as soon after he was removed from the hot room as was possible.

Representations of Physicians Making Releases Voidable

(Althoff v. Torrison et al. (Minn.), 167 N. W. R. 119)

The Supreme Court of Minnesota, in affirming an order denying a motion made by defendant Torrison for judgment or a new trial after a verdict had been rendered in favor of the plaintiff for damages for personal injuries from having been struck by an automobile belonging to the defendant and driven by one of his employees, holds that the plaintiff was not barred from maintaining this action by a release executed on what might be taken as mistaken and misleading representations by physicians.

The court says that if agents or physicians in the employ of the defendant procure a release by intentionally deceiving the plaintiff and causing him to believe that his injuries are trivial when they are known to be serious, the plaintiff is not bound by such release.

If the plaintiff executed the release in reliance on representations as to the character and extent of his injuries, made for the purpose of inducing a settlement by agents or physicians employed by the defendant, and such representations were not true, he may avoid the release although the representations were made in good faith and with no intent to deceive; for they had the effect of causing him to be deceived as to a present existing fact—the character and extent of his injury—and amounted to a fraud in law notwithstanding the good faith of those making them. But if the information given to the plaintiff concerning the nature and extent of his injuries was correct and he was not misled as to the consequences which ordinarily follow from such injuries, the fact that an opinion as to the duration of his disability, honestly given, turns out to have been erroneous is not a sufficient ground for avoiding the release.

There was no error in a charge of the trial court which permitted the jury to disregard the release and return a verdict for the plaintiff in this case if they found that she had been induced to execute the release by fraudulent misrepresentations concerning the injury to her leg, or if they found that she had sustained an injury to the sacro-iliac joint which by mutual mistake had not been taken into account when the settlement was made. Conceding that the physicians acted in good faith in stating that they found the leg normal except for certain bruises, yet the evidence would justify the jury in finding that they were mistaken, and that the plaintiff had been misled by them into believing that the injuries to her leg consisted only of these bruises when in fact they included an injury to the nerves quite different in character and effect from what the bruises were represented to be. In other words, the evidence would justify a finding that they had not merely erred in an opinion as to the probable duration of the disability, but, although not intending to do so, had in fact misled the plaintiff as to the character and extent of the injury to the leg—an existing fact susceptible of knowledge.

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[*] Reported in 3 Washington Decisions 297. From Public Health Reports, Oct. 4, 1918, p. 679.

The money received by the plaintiff having been expended in payment of doctor bills before she learned of the injury which caused her permanent disability, her failure to return it did not operate as a ratification of the settlement. The jury were properly instructed to apply it in reduction of damages if they found that she was entitled to recover them.

Construction of Law Giving Employer Right to Require Necropsy

(Indianapolis Abattoir Co. v. Bryant (Ind.), 119 N. E. R. 24)

The Appellate Court of Indiana, Division No. 2, says that this was the first case in that state, and no foreign case was called to the court's attention, and it found none, involving the construction of a similar statutory provision to that of Section 27 of the Indiana Workmen's Compensation Act, which reads, "The employer, or the industrial board, shall have the right in any case of death to require an autopsy at the expense of the party requiring same." The purpose of the lawmaking body in enacting such statute was, no doubt, for the protection of the employer, against unjust claims, particularly against the payment of compensation when death is due to natural causes instead of by accident. This court does not believe that it was the intention of the legislature that a necropsy could be demanded in every case of death. Such a construction would render the provision unreasonable when the cause of death is clearly apparent without it, when the cause of death is not uncertain and is not in dispute. The right to a necropsy is to be exercised with caution. It is one calculated under the most favorable circumstances to cause some distress of mind to the family of the deceased.

This was a proceeding under the workmen's compensation act to obtain compensation for the death of an employee of the abattoir company named Bryant, who left the claimant surviving him as his sole and only dependent. There was a dispute in this case as to the cause of the employee's death, and under the construction of the statute herein declared the employer had the right, if properly exercised, to have a necropsy performed. But when, as here, the legislature has not provided the procedure for its enforcement, that adopted must be reasonable both as to the time and the occasion for its exercise.

The court thinks that, when a representative of the company called on the claimant in the afternoon of the day following the death of the employee, after the body had been embalmed, and apparently without having with him any physician or any one to perform the work, and requested a necropsy, it could not be said that there was an unequivocal refusal to grant the right conferred by statute, because the claimant said she did not want a necropsy, unless it was absolutely necessary, but to have the man who sent the representative come and she would talk to him. The court also says that it will be observed that the statute in question makes no provision for making a necropsy further than the mere grant of the right, and provides no penalty or condition in case the claimant refuses to consent to it. Neither can it be implied from the statute as a whole that the legislature intended any penalty to follow a refusal. In the court's judgment, the refusal of a claimant to consent to a necropsy would not deprive the industrial board of jurisdiction to proceed to a final disposition of the case. Moreover, the right to demand a necropsy was a right that could be waived, and was waived by the employer's failure to follow up its request in some manner. Wherefore the award of the industrial board is affirmed.

Public Policy with Regard to Marriage of Epileptics

(Kitzman v. Kitzman et al. (Wis.), 166 N. W. R. 789)

The Supreme Court of Wisconsin holds that where, on Sept. 27, 1915, a man and a woman went from Wisconsin to St. Paul, Minn., there obtained a license to marry, and before a justice of the peace in the state of Minnesota had a marriage ceremony performed, receiving from the justice a marriage certificate in the proper form, and returning on the same day to Wisconsin, where they thereafter lived together as husband and wife, a judgment of a circuit court in Wisconsin confirming the marriage, in a suit brought therefor by the woman, must be reversed, with instructions to the circuit court to enter judgment declaring the marriage ceremony null and void, one of the findings of that court being that during the period of ten years preceding the trial the man had been subject to occasional attacks of epilepsy, which epileptic condition was caused by the excessive use of alcohol. The court says that the marriage in Minnesota was solemnized contrary to the express prohibition of the statutes of that state and contrary to its public policy. It was solemnized there after a fraud on the clerk of the district court, in his duty to ascertain and to be satisfied that there was no legal impediment to such marriage, had been perpetrated, either by the concealment by or false statement of the man as to his condition on a material and statutory requirement. It could not properly be held that the public policy of Minnesota, in prohibiting an epileptic from contracting a lawful marriage, was contrary or repugnant to the then public policy of the state of Wisconsin, inasmuch as this state then prohibited the marriage of insane persons and idiots; for, although there is a distinction both in the legal and medical sciences between epilepsy and insanity, yet the court may properly take judicial notice that epilepsy is a serious mental disease, and tends to weaken the power of the afflicted person and to injure his posterity. This court would be loath to declare, if not indeed prevented from declaring, that such a prohibition by Minnesota was contrary to the public policy of Wisconsin, in view of the fact that by Chapter 218, Laws of 1917, the legislature amended Section 2330 of the Wisconsin Statutes by inserting the word "epileptic" between the words "person" and "or," where the provision was made that "no insane person or idiot shall be capable of contracting marriage." The marriage ceremony, therefore, which the plaintiff asked the courts of Wisconsin to confirm in this action, was, where performed, contrary to public policy of the state resorted to by the plaintiff for the sole purpose of performing the ceremony, and this court will give it no higher value in Wisconsin than it had there. The mere fact that the unfortunate man, when examined as a witness in the court below, expressed himself as opposed to the action taken by his guardian in asking that the complaint be dismissed and the alleged marriage be declared void, and indicated his desire of having the marriage ceremony confirmed, and the relationship continued, did not alter the situation nor change the duty of the court in disposing of the case. The state has the right to control and regulate by reasonable laws the marriage relationship of its citizens, and the wishes and desires or even immediate welfare of the individual must yield to that of the public welfare as determined by the public policy of the state.

Insufficient Information Against Physician for Prescribing Liquor

(State v. Bradford (Mo.), 201 S. W. R. 913)

The Kansas City (Mo.) Court of Appeals, reversing a judgment of the circuit court, says that this was a prosecution, by information, of a physician for violation of the statute forbidding the issuance of a prescription for intoxicating liquor for other than medicinal purposes. But the information was not in the language of the statute and did not charge the physician with issuing the prescription for the purpose of enabling the liquor to be used otherwise than for medicinal purposes. In other words, the information did not connect the issuance of the prescription with the purpose of the use of the liquor. It was therefore insufficient.

Society Proceedings

COMING MEETINGS

American Assn. for S. & P. of Inf. Mort., Chicago, Dec. 5-7.
American Physiological Society, Baltimore, Dec. 30-Jan. 1.
American Public Health Association, Chicago, Dec. 9-12.
Medical Association of *Porto Rico*, Ponce, Dec. 14-15.
Society of American Bacteriologists, Boston, Dec. 30-Jan. 1.
Southern Surgical Association, Baltimore, Dec. 17-19.
Western Surgical Association, Chicago, Dec. 20-21.

INDIANA STATE MEDICAL ASSOCIATION

Annual Meeting, held at Indianapolis, Sept. 26-28, 1918

The President, Dr. J. Rilus Eastman, in the Chair

Anorectal Fistula

Dr. C. F. Fleming, Elkhart: A careful and free opening of ischiorectal abscesses will prevent many fistulas. It is well to cut as few fibers of the external sphincter as possible. The cut should be a single transverse cut and not a dissection destroying the muscle substance. The most important part of the diagnosis is the demonstration of the internal opening. Those fistulas with a straight tract do well when simply incised and allowed to heal, and burrowing fistulas are best dissected out by some method that avoids destruction of sphincter muscles.

DISCUSSION

Dr. C. C. Terry, South Bend: Our poor results in this line of work are due to incorrect diagnosis rather than to poor technic. Our examinations must be more thorough if we are to have better results; and following thorough examination the important thing is early operation. Often a simple incision, under a local anesthetic, with a small drain, will give relief. When patients are operated on early, forty-eight hours of drainage is all that is necessary.

Study of the Anus, Rectum and Sigmoid

Dr. H. H. Wheeler, Indianapolis: The anorectal line has a very important clinical significance in that it is the point at which the blood supply is differentiated. Above this line the blood is supplied by the superior hemorrhoidal artery, a branch of the inferior mesenteric, and returned through the portal circulation; below this line the blood supply is taken care of through the systemic circulation and returned through the inferior vena cava. The anorectal line also differentiates the lymphatic current and the nerve supply. The rectosigmoidal junction is the point of retention of effete matter, and also the most frequent site of malignancy. Spastic constipation occurs very often from a lower bowel disturbance that hinders the complete evacuation of the bowel.

DISCUSSION

Dr. W. H. Foreman, Indianapolis: The anorectal line is most important in cases of constipation, because until the fecal matter has passed this line the entire act of defecation is beyond control. Beyond the anorectal line it becomes a conscious matter, a matter that we can to a certain degree help or retard—and here is the cause of so many cases of constipation, because instead of making an effort to expel the fecal contents, the activity is inhibited and the fecal contents remain in the rectum and, therefore, below the sympathetic rectal reflexes—the conscious rectal reflexes. Ninety-five per cent. of all constipation is spastic and is due to an accumulation of material in the sigmoid that Nature is unable to expel.

Syphilis as It Pertains to the Eye

Dr. Albert E. Bulson, Jr., Fort Wayne: A syphilitic basis for the ocular lesion is diagnosed not only by certain features of the lesion itself, but also by the presence of these lesions in other parts of the body, by physical characteristics, and by the results of the Wassermann test. However, one must not be led astray by a negative Wassermann.

In acquired syphilis, and especially in the early stages, arsphenamin and neo-arsphenamin have proved of value; but repeated administration of the remedy is usually required, and the treatment should be supplemented by mercurial treatment. The iodids are reserved for lesions accompanied by an abundance of exudate. Syphilitic eye affections demand heroic treatment. Therefore, mercurials should be crowded just short of physiologic effects, and if potassium iodid is indicated at all it should be given in large doses. There are, however, no eye affections that yield any better results from prompt and energetic treatment than those of syphilitic origin, though, on the other hand, no lesions are more disastrous if not diagnosed early, and promptly and vigorously treated.

Factors of Safety in Hysterectomy

Dr. Donald Guthrie, Sayre, Pa.: The three most important factors of safety in this operation are: First, the preparation of the patient. I do not give any preoperative purge, believing it to be a harmful measure. Large amounts of fluid are lost in the purge, and a night that should have been spent in comfort and rest is a veritable nightmare. In case of nervous, excitable patients, or those suffering with insomnia, I advise a few days' rest in the hospital prior to operation. Second, the position of the patient during anesthesia. I advocate the Trendelenburg position when the patient is put to sleep. This means less handling of the intestine and consequently less trauma. Third, postoperative care. The patient should be made as comfortable as possible. Food is given early because it is the best stimulant for peristalsis. A catheter is used only when all other methods fail. I have had no postoperative hemorrhages. In 551 hysterectomies the mortality rate was 1.2 per cent.

Industrial Clinics and Welfare Work as an Industrial Asset

Dr. M. A. Austin, Anderson: As the necessity for making physical examination of employees has been shown to be desirable, the industrial clinic has been established. The average physician would be much surprised to visit some industrial plants and see the equipment provided for the welfare of employees. At one place in Chicago I found a hospital furnished with twenty beds, a surgery completely equipped for any kind of operation, a staff of seven doctors and twelve nurses, a laboratory equipped for roentgenographic work, and an expert in charge of the chemical and microscopic department, doing everything in the way of bacteriologic and serologic work. A Wassermann test was made in every fracture case and in every case in which there was delayed healing in a wound. In a conference with the heads of departments I asked as to the benefits, not only to the company but also to the employees, and they stated that it was the best investment the company had ever made. In former years many unjust claims were paid, which is largely obviated by this supervision of employees. This company, in common with many others all over the country, requires a physical examination of each employee, not only as a safety first measure, but also that each employee may be given the kind of work for which he is best fitted physically.

Infant Conservation

Dr. Ada E. Schweitzer, Indianapolis: The multiplicity of agencies already at work indicates general interest. There is need, however, for organization and centralization of efforts. Effective infant conservation will depend primarily on the care the infant receives, and includes considerations of heredity, prenatal care, care at birth, and all conditions affecting postnatal and infant care. As means of securing proper care we suggest: (*a*) Special education and training of physicians, nurses, teachers, parents and children, each concerning the phase of the work in which he may best aid. (*b*) The provision of adequate service, medical, nursing and hospital facilities available to all. The administration of this division of public health work by special departments established in state boards of health. A nation-wide adaptation of the statistics and suggestions furnished by our national clearing house, the Children's Bureau, U. S. Department of Labor, in the formulation of plans for this work; that the most practical and efficient organization may be accomplished with the least waste of money, energy and time.

Prenatal Care

DR. C. O. McCORMICK, Indianapolis: Prenatal care is conserving the health and strength of the prospective mother; it is foresight and forehandedness during pregnancy; it is preventive medicine applied to obstetrics; it is an effort to prevent mistakes and mishaps to both mother and infant before and during childbirth; it is an effort to give mother and infant the greatest possible chance. The chief results of this work are that it lowers the infant death rate under one year; produces healthier babies; reduces the number of stillbirths and miscarriages; increases the number of normal births; reduces the number of toxemia and eclampsia cases; increases cases of maternal nursing; reduces maternal mortality; helps eliminate the midwife, and last, but not least, elevates the standard of obstetrics, making it a line of work attractive to the young physician.

DISCUSSION

DR. JANE KETCHAM, Indianapolis: We began last May to examine the children, and in this work we had the cooperation of the medical school, of the physicians, and also of the hospitals and the Public Health Nursing Association. We had in all 212 clinics in which 17,000 children were enrolled. Some were not examined, but many were. In the country districts the greatest cooperation was seen, the people being much interested. In the city we sometimes had no children at all, and at other times the clinics were overflowing. We are already seeing the benefit of the follow-up work. Children are being brought to the medical school clinics and to private offices to see if the defects that we pointed out can be remedied. I feel that this work has been of great advantage to the community, and it certainly is a stimulating field in which to work.

DR. LOUIS ROSS, Richmond: In Wayne County about half the children were registered, and we examined about half of those, so that we examined one fourth of the children under 6 years of age. We are undertaking follow-up work through our social service bureau and a group of volunteer visitors, and the results are very encouraging.

DR. W. A. FANKBONER, Marion: The success of this movement does not depend entirely on the physician. It depends on organization and publicity. If you give the American community a vision of the importance of this work, the people will come to the standard.

DR. N. BAINBRIDGE POWELL, Marion: This campaign for child welfare was very well carried out in our county, but the important thing now is the follow-up work. Our mothers are interested and are willing to do what they are told; but the agencies back of them—the grandmothers and all the talk that is brought to the home—is what we have to fight.

Clinical Significance of Blood in the Urine

DR. H. O. MERTZ, Laporte: Any urinary hemorrhage is an expression of a pathologic lesion along the urinary tract. No definite conclusion can be formed by simply studying the symptoms of hemorrhage, as a malignant process may cause so little bleeding that no anxiety is aroused in the mind of the patient. The most confusing and difficult case of urinary hemorrhage I have seen was due to a small papilloma of the urethra that I had repeatedly overlooked in my examinations. This growth was near the external urethral meatus, and at times a drop of bright red blood would pass from the resting urethra. At urination the first urine contained much blood, while the last showed only microscopic blood.

DISCUSSION

DR. M. JOSEPH BARRY, Indianapolis: The diagnosis of blood in the urine is easy, a microscopic examination of a fresh specimen of urine being all that is necessary; but once the condition has been diagnosed, it becomes of the utmost importance to determine the origin and cause, and this may be done in a majority of cases if we take advantage of the modern methods of diagnosis. After exhausting all of these methods with negative results, there is, however, a certain residue of cases that formerly were designated as "essential renal hematuria," "angioneurotic renal hematuria," "renal epistaxis" and "renal hemophilia." We are not justified in saying there is no lesion back of the hemorrhage because we cannot find it. The most careful observers who have studied the postoperative and postmortem material in these cases have been able to demonstrate evidence of minute foci of infection in the kidney substance; so we must not close our eyes to the possible gravity of the situation in any case in which blood appears in the urine.

DR. BERNHARD ERDMAN, Indianapolis: In the larger cities the commonest cause of gross as well as microscopic evidence of blood in the urine is gonorrheal infection.

DR. L. F. SCHMAUSS, Alexandria: We should not wait for blood in the urine to diagnose renal disease.

Infection and Toxemia in Relation to Glandular Organs

DR. HUGO PANTZER, Indianapolis: Removal of the focus or foci of infection wherever located in the entire body, removal of anatomic irregularities, and active eliminative treatment, medicinal, hydrotherapeutic and hygienic, will restore most cases to normal. The resort to organ therapy fails in many cases unless accompanied by active eliminating measures. Associated, the two do well in those cases in which, under like conditions of disease of the organs of digestion, we administer pepsin, trypsin, pancreatin, etc. In the many cases in which my efforts were limited to the surgical and eliminating measures mentioned, my experience was such that the organ products, as now understood and applied, are of little avail. However, relief from them comes most happily in those cases in which the effects of toxemia and bacteremia have routed all physiologic function for the time or permanently.

Cesarean Section and Obstetric Operations Under Nitrous Oxid-Oxygen Anesthesia

DR. I. McKESSON, Toledo, Ohio: If there is an ideal anesthetic for obstetric operations, it is nitrous oxid. Its transient effect when removed permits almost immediate resumption of normal labor; its lack of depression on uterine and other muscles when properly administered, its safety to mother and child, and the means at hand for perfusing the child with oxygen through the mother while the cord pulsates, are factors that should decrease fetal and maternal mortality and morbidity in operative obstetrics. The hope of reduction of morbidity and mortality in general rests in great measure on the disposition of the midwife, who delivers 50 per cent. of the parturients in the larger cities.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Sixty-Eighth Annual Session, held at Philadelphia, Sept. 23-26, 1918

(Concluded from page 1771)

Intraspinal Auto-Aminized Serum Treatment of Cerebrospinal Syphilis

DR. B. A. THOMAS, Philadelphia: Arsphenamin therapy, either intravenously or intraspinally, cannot restore degenerated spinal cords. Intraspinal treatment accelerates the restoration of the spinal fluid to normal, arrests the degenerative process and insures greater permanency of therapeutic results. Intraspinal treatment by auto-arsphenaminized or arsphenaminized auto-arsphenaminized serum injections should supplement intensive intravenous therapy when necessary. Cases of endarteritis with vascular or circulatory disturbances and those with exudative gummatous meningitis, also many cases of tabes dorsalis, respond satisfactorily to intravenous therapy alone. Cases with marked tract or cortical degeneration offer little, if any, hope of improvement. Treatment in qualified cases should be continued until the findings in the spinal fluid, as well as the blood, are rendered negative, except globulins, which may persist positive in many cases irrespective of the amount of treatment. Mercury and the iodids continue to be indispensable supplementary therapeutic aids in the treatment of cerebrospinal syphilis.

DISCUSSION

DR. LORAINE L. SCHWARTS, Pittsburgh: Unless the general medical profession universally recognizes the necessity for routine lumbar puncture in all cases of syphilis I believe we shall have in twenty years as many posterior sclerosis tabetics, paretics and cerebrospinal cases as we are having under the old treatment. Opportunities for better work in this field rests primarily with the physician having charge of the patient during the first six months of his infection. I do not in all cases delay exploration of the spinal canal until I am ready to discharge the case. If there is the slightest sign of central nervous involvement, resistance to therapy, or persistence of strong Wassermann within the first three months I have the spinal canal explored and in many of these cases I think we save the patients many intravenous doses of arsphenamin by starting the spinal treatment early. I am particularly in accord with the skeptical views held by many neurologists regarding the effect of treatment because when the patient reaches the neurologist the anatomic changes present render the case unpromising.

Dr. Jay F. Schamberg, Philadelphia: I am in full accord with the deductions drawn by Dr. Thomas on the intraspinal treatment of cerebrospinal syphilis. It is impossible to cure cases of parenchymatous diseases of the nervous system if degenerative changes have already taken place. The colloidal gold test warns us in advance of impending changes in the nervous system. It is essential that we examine the spinal fluid in all patients in whom a negative blood Wassermann is obtained. The time to cure paresis is before clinical evidences of the disease develop.

Dr. Alfred Gordon, Philadelphia: I have had an experience of several hundred cases of neurosyphilis, and in some brilliant results have attended the first or second administration of autoneo-arsphenaminized serum. I have also had some very regrettable results. Generally speaking, I find no parallelism between laboratory findings and clinical symptoms. While the old methods of treatment of neurosyphilis are good, the intraspinal method is an excellent adjunct.

Dr. Paul G. Weston, Warren: In our hospital we divided our paretics into so many groups giving each a different treatment; one group was given no antisyphilitic treatment. We found practically no difference in the average length of life of the treated and the untreated patients. At necropsy the same changes were found in the brains of the treated and untreated.

Application of the Principles of Advanced Psychiatry

Dr. J. Allen Jackson, Philadelphia: The principles are expressed in the functions of mental hygiene, and combine the knowledge gained in custodial institutions with community forces. They are applicable to rural communities, municipalities, or states. In communities with a population over 500,000, community service would best be obtained through a municipal bureau of mental hygiene. To secure cooperation with outside organizations such a bureau should be under the supervision of a trained psychiatrist with subordinate district supervision. In such districts there would be designated definite psychiatric centers under the direction of an alienist assisted by a trained field worker. At these centers public education could be encouraged, early care and treatment with definite assignment to proper institutions, custodial psychopathic, preventoriums, or general hospitals, could be made. The alienist in charge of the psychiatric center would bear the same relation to the custodial institution as the medical inspector of the bureau of health bears to the hospital for contagious diseases. The chief officer of such a bureau should be a conservatively progressive psychiatrist experienced in intramural and extramural psychiatry. The alienist assigned to each center should be a practical man of broad experience and training. The field workers should be graduate nurses with general hospital and psychiatric training and a keen insight of human nature. The immediate effect of such a bureau would be a temporary increase of custodial patients, counterbalanced, however, by the probability of an increased recovery rate. The effect on the indigent and permanently insane would be speculative. Early diagnosis and appropriate treatment would be assured. The interest of patients and their relatives would be safeguarded. The propagation of the mentally unfit would be checked, and the cost to the municipality and state of the care of these unfortunates would be eliminated.

DISCUSSION

Dr. John A. Lichty, Pittsburgh: I am in accord with Dr. Jackson's method of organization. Work of this kind means economy and efficiency, the saving of lives and bringing back to health many people now submerged.

Dr. S. Solis Cohen, Philadelphia: I wish the same plan might be inaugurated in our dealing with tuberculosis. By our defective hygienic organizations we produce a large number of tuberculosis and insanity cases. Having produced them, we save a few in a half-hearted fashion and then allow them to lapse.

Dr. E. E. Mayer, Pittsburgh: Unless physicians get away from the individualistic, they will loose their prerogative of the confidence of the community; social and vocational workers will take up the spheres of activity which should be, in part, those of the medical profession. Hygiene should deal with the social problem of the community as well as the mental. Until we have a plan by which these various agencies work with the medical profession I fear we shall accomplish but little. I trust that our state authorities and organizations may attack the problem from this standpoint.

Prof. Norbert J. Melville, Philadelphia: The Mental Hygiene Committee of the Public Charities Association is prepared to cooperate with physicians in any community who are ready to direct that type of cooperation. We are already working through welfare agencies to convince social workers that they ought to go to the specialist for direction in social psychiatry and that the social agencies ought to send some of their staff for a time to take a course in the principles of social psychiatry. It is the thought of the committee that with the organization of volunteer workers eventually the state may take over the work.

Serum Treatment of Epidemic Cerebrospinal Meningitis

Dr. John A. Kolmer, Philadelphia: The serum treatment of epidemic cerebrospinal meningitis by the intraspinal route of injection has reduced the gross mortality of 70 to 90 per cent. among patients not treated with serum to 30 per cent. or less. The problem is complicated because more than one type of meningococcus is capable of producing the disease, and by the fact that the micro-organism may be carried and disseminated by convalescents and by healthy carriers. It is highly important to employ a potent polyvalent serum in the treatment of meningococcus infections because at the present time type diagnoses and the employment of monovalent serums in treatment are not yet available as in the diagnosis and treatment of lobar pneumonia. Investigations in the Army and Navy have shown that the majority of cases of meningitis are due to previous contact with a patient or a healthy carrier of the coccus. During epidemics of the disease between 1 and 2 per cent. of persons are chronic carriers and these constitute the greatest source of danger. Treatment and management of the chronic carriers are as puzzling as of the healthy carriers of virulent diphtheria bacilli. The successful treatment of meningococcus meningitis with serum depends largely on early diagnosis and the proper administration of sufficient serum of high potency and polyvalency. With the least clinical suspicion of meningitis the physician should resort to spinal puncture without delay. The micro-organisms are regarded by Flexner as infecting the meninges by direct extension along the lymphatics of the olfactory nerves with their occasional presence in the blood stream; recent studies, particularly of Herrick and Baeslack indicate that the coccus may be present in the blood more frequently than heretofore thought and that this "meningococcus sepsis" may produce systemic symptoms. It is my custom to culture the blood routinely at the time of spinal puncture. If after two intraspinal injections of large doses of antiserum improvement is not shown clinically and in the analysis of the cerebrospinal fluid, I advise that the serum of a second manufacturer be substituted, hoping that the second serum may contain specific antibodies for the particular type of meningococcus producing the disease which were absent from the first serum. Our main interest in the serum therapy of meningitis has been concerned with the influence of fresh normal serum alone and in combination with antimeningitis serum on virulent meningococci. On the basis of our experimental results we believe it is logical to complement the antimeningitis serum before intraspinal injection by the addition of at least one cubic centimeter of fresh human or guinea-pig serum to each 9 c.c. of antiserum, particularly in the treatment of serum-resistant cases. We have not yet been able to give this method clinical trial. It seems worthy of use in further efforts toward improving the results of the serum treatment of meningococcus-meningitis.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics

November, 1918, **78**, No. 5

1 Hydatiform Degeneration: Study of Over One Hundred and Fifty New Cases. A. W. Meyer.—p. 641.
2 *Multiple Vascular Anomalies of Great Vessels in New-Born Child. E. H. Norris and L. M. Miller.—p. 668.
3 Relationship of Syphilis to Abortion, Miscarriage and Fetal Abnormalities. F. L. Adair.—p. 678.

2. **Muliple Vascular Anomalies of Great Vessels.**—In the case cited by Norris and Miller there was aplasia of the pulmonary arteries, dysplasia of the left sciatic and femoral arteries, with aplasia of the left common iliac, external iliac, and umbilical arteries, persistence of the left cardinal system with aplasia of the right superior vena cava.

American Journal of Orthopedic Surgery

November, 1918, **16**, No. 11

4 *Transportation of Wounded; Application of Splints. N. Allison.—p. 389.
5 *Hemorrhagic Osteomyelitis and Sarcoma in Bone. G. Barrie.—p. 392.
6 Moving Picture as a Method of Teaching; Especially Adaptable to Postgraduates. R. T. Taylor.—p. 414.
7 *Symptoms Attributed to Lesions of Sacro-Iliac Joint. R. B. Cofield.—p. 418.
8 Pathologic Conditions of Peripheral Nerves. S. M. Cone.—p. 428.
9 The Draft Examination. A. O'Reilly.—p. 433.
10 Demonstrable Luxation of Sacro-Iliac Joints. E. T. Wentworth.—p. 443.
11 General Principles of Splinting for Paralyses from Nerve Injuries: Special Application of These Principles in Median and Ulnar Nerve Paralyses. M. Longworthy.—p. 445.

4. **Transportation of Wounded.**—Allison calls attention to the fact that an equipment of splints and surgical dressings and appliances has been described in a small volume called a "Manual of Splints and Appliances for the Medical Department, U. S. Army," issued to the Army under Special Order 73, Paragraph 17, and approved by the Commanding General of the Expeditionary Force. This volume has been distributed to the medical officers of the division in the field and to those in all hospitals in the Zone of Advance. The splints therein described have been demonstrated to all battalion and regimental surgeons, and to the commanders of all the ambulance companies and the enlisted personnel of the same. Practical drills have been held, and competition started to develop efficient, rapid and proper application of these splints, so that in the divisions already actively engaged a practical knowledge exists of the value of traction and fixation in the support of fractured bones and injured joints. The type of splints selected by the Splint Board has, so far as experience goes, met existing conditions in a most satisfactory manner; the splints are easily applied and give, in a simple and readily understood manner, the exact principles of treatment insisted on by the Division of Orthopedic Surgery.

5. **Hemorrhagic Osteomyelitis and Sarcoma in Bone.**—In this paper the attempt is made to differentiate the lesion termed "hemorrhagic osteomyelitis" from the true sarcoma found in bone, and to demonstrate that to group this affection with the malignant bone neoplasms is not justified. Barrie is of the belief that a diagnosis of malignancy cannot and should not be made or based on the giant-cell content in such processes. A correct and confirmatory diagnosis rests on the variety and architectural arrangement of the other cells occupying the microscopic field. It is absolutely essential to recognize that giant cells, of the type commonly found in some of the low-grade malignant sarcomas, are also present in most of the noninfective low-grade inflammatory processes in bone, wherever destruction has occurred and regenerative and reconstructive effort is taking place; the latter being evidenced by the presence of vascular granulation tissue filling up destroyed areas or cavities. In true sarcoma, regardless of the degree of malignancy, there is never a resting stage; the increase in size of the neoplasm is progressive and constant. No apparent effort at regeneration or reconstruction of normal tissue occurs. In hemorrhagic osteomyelitis, increased bone destruction, following initial injury, is due to nutritional inhibition and necrosis of bony structure resulting from pressure of the proliferative granulation tissues. Hand in hand with destruction, efforts at regeneration and rebuilding of normal structure go on, evidence of which is seen in the formation of primary elemental granulation tissue. Eight cases are cited.

7. **Symptoms Attributed to Lesions of Sacro-Iliac Joint.**—A thorough anatomic and clinical study of lesions of the sacro-iliac joint and of analogous conditions seen so frequently following injuries to joints elsewhere in the body leads Cofield to the belief that the lesions are none other than acute and chronic sprains of the sacro-iliac joint. The pain is doubtless due to the stretching or tearing of some of the fibers of the posterior ligament at the time of the injury, and it may continue for an indefinite time if efficient immobilization of the joint is neglected. The pain in the lumbo-sacral region and buttocks is to be explained by the excessively prolonged effort of the posterior musculature in guarding against joint movement, just as any other continued muscular action, unduly prolonged, will result in a severe aching pain. The sciatic pain is explained by the mechanical irritation of the nerve as it passes through the groove formed by the outer and inner hamstring muscles. These muscles being in a state of spasmodic contraction produce an irritation of the nerve, which causes pain which is referred to the distribution of its branches below the lesion. Further evidence which confirms this theory is furnished by the fact that these patients will almost invariably state that the sciatica appeared immediately following the manipulation. Cofield says that careful study of the anatomy and functions of the sacro-iliac joints precludes the possibility of subluxation or relaxation occurring, except in severe crushing injuries or possibly during the later stages of pregnancy, when all pelvic ligaments are in a state of temporary relaxation. The remarkable results achieved by bonesetters and osteopaths in the so-called "luxations" and "misplacements" of the lower spine or sacro-iliac joint may be attributed to their manipulation of the joint and massage of the muscles, which may modify or relieve the symptoms after one or many treatments, depending on how soon they give the patient the "proper twist."

American Journal of Public Health

September, 1918, **8**, No. 9

12 Program of War Department Against Venereal Disease. W. F. Snow and W. A. Sawyer.—p. 639.
13 Protection Against Food Contamination. C. E. McCombs, New York City.—p. 644.
14 Ice Cream Epidemics and Model Regulations for Control. H. W. Hamilton.—p. 651.
15 Feeblemindedness and Social Environment. P. H. Bryce.—p. 656.
16 Bacterial Examination of Green Vegetables. F. W. Kurk.—p. 660.
17 Public Health Instructor: New Type of Health Worker. E. V. Brumbaugh, Milwaukee.—p. 662.
18 Public Health Lessons of the War. E. C. Levy, New York City.—p. 664.
19 Bibliography of Field Water Supply. J. J. Hinman, Jr., Iowa City.—p. 668.
20 Charts and Maps as Used by Health Officers. G. T. Swarts, Jr., Providence, R. I.—p. 674.
21 Transport Sanitation. C. W. Berry.—p. 690.
22 Child's Ten Commandments to Parents. C. E. Turner.—p. 695.

Archives of Pediatrics

September, 1918, **35**, No. 9

23 *Diphtheria Mortality and Treatment. A. L. Hoyne, Chicago.—p. 513.
24 *Hemoptysis Following Exploratory Puncture of Chest. A. Caille.—p. 524.
25 *Hemoptysis in Children. Five Cases. P. H. Pierson.—p. 527.
26 Congenital Stricture of Duodenum. Operation. Death. H. M. McClanahan.—p. 533.
27 Thomas Sydenham's Description of Measles, Scarlet Fever and Chorea. C. Herman.—p. 536.
28 Story of Evian les Bains. R. B. Mixsell.—p. 541.

23. **Treatment of Diphtheria.**—Hoyne is convinced that far too much whisky is used in the treatment of diphtheria. Strychnin, he says, should only be given for a brief period to tide over some emergency. The indiscriminate giving of strychnin from the time a diagnosis of diphtheria is made until the disease has run its course is extremely likely to produce dire results. The chief requisite of the heart in diphtheria is rest. If stimulants must be given over a prolonged period, some form of digitalis, in Hoyne's experience, has usually produced the best results. The chief value of strychnin is as an emergency measure in case of collapse.

As to the dosage of antitoxin, while each case must be judged on its individual characteristics in arriving at the proper dosage, in Hoyne's experience the following scale has served as a fair guide: 1. Purely tonsillar cases, from 5,000 units to 10,000 units. 2. Laryngeal, 10,000 units to 15,000 units. 3. Pharyngeal (including tonsils), 15,000 units to 25,000 units. 4. Nasal or nasopharyngeal, 20,000 units to 50,000 units. The doses will vary somewhat according to the duration of the disease, and the possibility of more than a single type occurring in the same patient must not be overlooked. If possible, the maximum amount of antitoxin required for a given case should be administered as soon as determined. Nothing is to be gained by a division of the dose, that is, by repeated small doses. Hoyne favors the intramuscular injection into the outer side of the thigh.

24. **Hemoptysis Following Exploratory Puncture of Chest.**—Caillé urges that the clinician bear in mind that in acute cases in which a puncture seems indicated, the introduction of an exploratory needle into a thorax containing a highly congested lung is attended with some degree of risk when cyanosis, and other characteristic signs, point to cardiac or circulatory failure. In obscure, subacute and chronic conditions a roentgen-ray investigation should be made; it may obviate the necessity of a puncture. When exploratory puncture of the chest is performed for the purpose of eliciting the nature of an exudate or transudate, which otherwise reveals its presence by characteristic physical signs, including a bulging of an intercostal space during inspiration, the danger of an internal hemorrhage is practically nil.

25. **Hemoptysis in Children.**—In the five cases cited by Pierson, the hemoptysis was due to bronchial gland tuberculosis, pressure on, and erosion of, a vessel near the hilus by an enlarged gland.

California State Journal of Medicine

November, 1918, **16**, No. 11

29 Syphilis of Thyroid. Report of Case. E. H. Schneider.—p. 484.
30 Seminal Vesiculotomy in Treatment of Gonorrheal Rheumatism. Report of Cases. J. R. Dillon.—p. 485.
31 Disease of Aorta as Shown by Fluoroscopic Study. S. E. Bailey.—p. 490.
32 Treatment of Syphilis of Central Nervous System. R. W. Harvey.—p. 491.
33 Conservation of Children. J. Crawford.—p. 493.
34 Diverticula of Female Urethra. Report of Case of Congenital Type. J. C. Neel.—p. 494.
35 Radium in Treatment of Uterine Cancer: Case Reports. R. Duncan.—p. 497.
36 Roentgen Ray Treatment of Uterine Fibroids. H. J. Kreutzmann.—p. 501.
37 Lung Reflexes in Pulmonary Tuberculosis. F. M. Pottenger.—p. 502.

Boston Medical and Surgical Journal

Nov. 7, 1918, **79**, No. 19

38 Neuroses Among Returned Soldiers. C. B. Farrar.—p. 583. (To be continued.)

Iowa State Medical Society Journal, Des Moines

October, 1918, **8**, No. 10

39 Medical Lessons of Present War. C. P. Howard, Iowa City.—p. 351.
40 Perineal Prostatectomy. J. Crawford, Cedar Rapids.—p. 355.
41 Foreign Proteids in Therapeutics. E. S. Evans, Grinnell.—p. 360.
42 Injury to Face with Involvement of Maxillary Antrum. J. B. Naftzger, Sioux City.—p. 365.
43 Plague in India. B. S. Jain.—p. 368.

Journal of Bacteriology

July, 1918, **3**, No. 4

44 *Relationship Between B. pertussis and B. bronchisepticus. N. S. Ferry and H. C. Klix.—p. 309.
45 Occurrence of Different Types of Colon-Aerogenes Group in Water. L. A. Rogers.—p. 313.
46 *Elimination of Spurious Presumptive Tests for B. Coli in Water by Use of Gentian Violet. I. C. Hall and L. J. Ellefson.—p. 329.
47 *Use of Gentian Violet in Presumptive Tests for B. coli in Milk with Reference to Sporulating Anaerobes. I. C. Hall and L. J. Ellefson.—p. 355.
48 *Value of Petroleum-Ether Method for Isolation of B. Typhosus from Feces. L. A. Kohn and C. Krumwiede, Jr.—p. 361.
49 *Bacterial Nutrition: Utilization of Protein and Non-Protein Nitrogen. N. Berman and L. F. Rettger.—p. 367.
50 *Influence of Carbohydrate on Nitrogen Metabolism of Bacteria. N. Berman and L. F. Rettger.—p. 389.
51 Classification and Nomenclature of Bacteria. Subgroups and Genera of Actinomycetales. R. E. Buchanan.—p. 403.
52 Classification of Aciduric Bacteria. A. H. Rahe.—p. 407.
53 *Germicidal Action of Freezing Temperatures on Bacteria. C. M. Hilliard and M. A. Davis.—p. 423.

44. **Differentiation Between B. Pertussis and B. Bronchisepticus.**—The value of the complement fixation tests in differentiating between these two organisms was made the subject of a study by Ferry and Klix. In a large majority of the tests, the *B. bronchisepticus* immune serum bound the complement in the presence of both the bronchisepticus and pertussis antigens, while the *B. pertussis* immune serum bound the complement in the presence of the homologous antigen and also the human and monkey strains of *B. bronchisepticus*. It did not bind the complement in the presence of a dog strain of *B. bronchisepticus*.

46. **Elimination of Spurious Presumptive Tests for B. Coli in Water by Use of Gentian Violet.**—Hall and Ellefson describe a method to prevent gas formation by anaerobic organisms, so that a greater proportion of positive tests is referable to coliform bacilli alone. This they propose to accomplish through selective inhibition by gentian violet. The gram-positive sporulating aerobes, among which occasional forms capable of giving positive presumptive tests occur, are also inhibited.

47. **Use of Gentian Violet in Presumptive Tests for B. Coli in Milk.**—While Hall and Ellefson do not feel justified as yet in claiming that the addition of gentian violet to lactose broth leads to the detection of *B. coli* in every case in which gas is formed, yet its use certainly does not interfere with the demonstration of *B. coli*; indeed, it distinctly favors such demonstration. Further, the use of 1 to 100,000 gentian violet in the litmus lactose agar plate does not interfere with the growth or acid producing properties of the organism; rather it eliminates to a large degree the masking of acid produced by *B. coli*, through the inhibition of alkali forming, proteolytic, nonlactolytic, gram-positive sporulating bacilli of the hay bacillus group and prevents spreading growths due to these organisms. Moreover, the inhibition of acidifying cocci is of distinct advantage in the search for *B. coli*.

48. **Petroleum-Ether Method for Isolation of B. Typhosus from Feces.**—Kohn and Krumwiede found that the petroleum ether method for the detection of *B. typhosus* has no advantage over direct plating on a medium which restrains the growth of the associated fecal types. With short periods of exposure it may be successful where direct plating on Endo's medium alone fails. There is a strong tendency to reduction of the number of *B. typhosus*, not necessarily associated with a greater reduction of the accompanying fecal bacteria. The danger of infection to those using the method, however, is sufficiently serious to warrant its condemnation, especially as it offers no advantage over direct plating on differential restraining mediums.

49. **Bacterial Nutrition: Utilization of Protein and Nonprotein Nitrogen.**—The author's conclusions, summarized briefly, are: Bacteria are unable to decompose coagulated native protein when there is no other source of available nitrogen in the test medium. Purified proteose also is resistant to direct attack by bacteria. Gelatin-nonliquefying bacteria and some of the liquefiers are feeble in their action on Witte's peptone. The ability of an organism to liquefy gelatin is no sure indication of its proteolytic properties. Gelatin and casein resemble proteose in their resistance to bacterial attack.

50. **Influence of Carbohydrate on Nitrogen Metabolism of Bacteria.**—This investigation has shown conclusively that fermentable sugars, in moderate amounts, do not affect the nitrogen metabolism of bacteria, provided experimental conditions are favorably maintained, or, in other words, under conditions of favorable environment. The common belief in a so-called "sparing action" of sugars in a protein medium is untenable in the light of these experiments. There is a true sparing action, however, in the sense that the nitrogen is utilized merely for growth, and that the sugar furnishes the energy.

53. **Germicidal Action of Freezing Temperatures on Bacteria.**—Extensive experiments were made by Hilliard and Davis to determine the effect of cold on bacteria. He found that intermittent freezing of bacteria exerts a more effective germicidal action than continuous freezing. The reduction is much less in milk and cream than in pure tap water when freezing temperatures are applied, due, no doubt, to physical protection offered to the bacteria by the colloidal and solid matter in suspension. The degree of cold below freezing is not a very important factor in the destruction of bacteria. There is no critical temperature below freezing where the germicidal effect is greatly accelerated. The death rate of *B. coli* is much higher in mediums which are frozen solid than it is in the same mediums not solid and at a slightly lower temperature. It is suggested that crystallization, probably resulting in mechanical crushing, is an important germicidal factor in causing the death of bacteria at zero centigrade and below. The greatest reduction occurs promptly on freezing and refreezing, but is not caused so much by the sudden change in temperature as by this mechanical factor.

Journal of Cutaneous Diseases, Chicago

November, 1918, **36**, No. 11

54 Dermatitis Herpetiformis: Relationship to Bullous Diseases, Especially Erythema Multiforme and Pemphigus. M. B. Hartzell, Philadelphia.—p. 497.
55 Rôle of Vegetative Nervous System in Diseases of Skin. E. H. Reede, Washington, D. C.—p. 505.
56 Superinfection in Syphilis. Report of Cases. J. V. Klauder, Philadelphia.—p. 515.
57 Pathology of Mycosis Fungoides. H. Mackay, and W. Boyd, Winnipeg, Canada.—p. 521.
58 Etiology of Cancer of Lip. D. W. Montgomery, San Francisco.—p. 529.

Medical Record

Nov. 9, 1918, **94**, No. 19

59 *New Operation for Hallux Valgus. J. Torrance Rugh.—p. 793.
60 Effect of Selective Draft Law in Production of Psychoses. H. P. Hyder.—p. 806.
61 Treatment of Mental Defectives Through Physical and Medical Measures. E. B. McCready.—p. 809.
62 Personal Hygiene. How Old, Yet Ever New. D. E. Drake.—p. 811.

59. **New Operation for Hallux Valgus.**—In the operation done by Rugh the joint is exposed by a curved, longitudinal incision and the flap (base down) is dissected free to the lower edge of the joint. A tongue-shaped flap is then made (base backward as in the Mayo operation) and should include the bursa and the internal portion of the capsular ligament back of the base of the proximal phalanx of the great toe. This is turned backward and the lower end of the metatarsal is freed of ligamentous attachments. With a sharp osteotome or chisel, sufficient of the epiphysis of the metatarsal is then removed to allow straightening of the great toe. This usually amounts to about one-fourth inch. This cut also is made slightly diagonal from within outward and from behind forward. The inner sharp and hypertrophied corner is next removed with the osteotome. The top and under parts of the epiphysis are then taken off to make a wedge-shaped end on the bone. The slant on the top can be made very much greater than underneath so as to leave as much weight-bearing surface as possible. There will also remain the supporting surfaces of the sesamoid bones on the under surface of the joint. The tongue-shaped flap is then passed across the end of the bone, covering in the wedge and secured with sutures if necessary. Sutures are then passed from the base of the tongue-shaped flap on the inner side to the base of the proximal phalanx, sewing back and forth to hold the toe toward the inner side. The skin incision is next closed and dressings applied to hold the toe inward. The bandage should make a figure-of-eight about the toe and foot and hold the toe horizontal and slightly adducted. In some cases a splint of wood or plaster may be advisable, but this is seldom necessary. After two weeks' time the use of the foot is permitted and weight bearing advised.

Minnesota Medicine, St. Paul

November, 1918, **1**, No. 11

63 Effects of Underfeeding and Refeeding on Growth of Systems and Organs of Body. C. M. Jackson and C. A. Stewart, Minneapolis.—p. 403.
64 Problems of Infection. C. H. Mayo, Rochester.—p. 414.
65 Rheumatoid Arthritis. J. L. Porter, Chicago.—p. 417.
66 Myocardial Degeneration. C. N. Hensel, St. Paul.—p. 422.
67 Ambulatory Treatment of Hemorrhoids. W. A. Fansler, Minneapolis.—p. 426.
68 Nurses in War Time. E. R. Wing, St. Paul.—p. 428.
69 "Chronic Simple Glaucoma." An Exceedingly Common Disease. E. J. Brown, Mineapolis.—p. 430.

New Orleans Medical and Surgical Journal

November, 1918, **71**, No. 5

70 Spanish Views on Spanish Influenza. L. Ambrose, New Orleans.—p. 222.
71 Inguinal Approach in Cure of Femoral Hernia. L. H. Landry, New Orleans.—p. 235.
72 Thyroidectomy Under Local Anesthesia. C. W. Allen, New Orleans.—p. 242.
73 Retro-Pharyngeal Abscess. M. P. Boebinger, New Orleans.—p. 249.

New York Medical Journal

Nov. 9, 1918, **108**, No. 19

74 Destruction of Physiologic Function After Operations on Nose and Throat. W. Freudenthal.—p. 797.
75 Diagnostic Value of Eye Ground Appearances in Nephritics. J. A. Kearney.—p. 803.
76 Acute Eczema Due to Faulty Metabolism of Food Elements. L. Fischer.—p. 804.
77 Nervous and Mental Disturbances of Influenza. S. E. Jelliffe.—p. 807.
78 Temperament a Synonym for Nervousness in Singers. J. J. Levbarg.—p. 811.
79 Confluent Suffocative Broncho-Pneumonia in Wake of Present Influenza Epidemic. F. A. Jones—p. 811.
80 *Interesting Orthopedic Cases in First Surgical Division, Fordham Hospital. S. W. Boorstein.—p. 812.

80. **Orthopedic Cases in First Surgical Division, Fordham Hospital.**—Boorstein cites a case of bilateral pathologic dislocation of the hip joint, the patient being 6 years of age. The condition was the result of a septic arthritis, the sequel of an attack of scarlet fever. He also cites two cases of low lumbar backache due to enlarged transverse process of the last lumbar vertebra. The removal of this process relieved the patient completely of the pain. Another case was one of chondroma following trauma. The patient had received an injury to the dorsal surface of the right foot by pressure of a rocking chair. For three and a half years the patient was suffering from pain in the foot. A swelling the size of a hazel nut, over the external cuneiform, was removed. The pathologic diagnosis was chondroma. Patient made a perfect recovery and has never suffered since. Another patient developed a sarcoma of the trochanteric region of the femur following a fall on the hip. Evidence of metastases in the humerus and lungs were present.

Southern Medical Journal

November, 1918, **11**, No. 2

81 Internal Diseases, Pediatrics, Neurology, Diagnostic Methods, Etc., Acidosis: T. D. Parke.—p. 721.
82 Tuberculosis Examination Methods in U. S. Army. I. S. Kahn. —p. 727.
83 Confluent Suffocative Bronchopneumonia Following Influenza. F. A. Jones.—p. 732.
84 *Dangers of Chenopodium Treatment of Uncinariasis. D. A. Roth.—p. 733.
85 Intestinal Obstruction Due to Ascaris Lumbricoides. M. D. Levy. —p. 734.
86 Mortality from Malaria Among Wage Earners; Malaria Mortality Experience of General Population. L. I. Dublin.—p. 736.
87 Intensive Community Work in Tennessee. E. L. Bishop.—p. 738.
88 Stem Pessary: An Instrument of Value in Certain Selected Gynecologic Conditions. C. E. Dowman.—p. 742.
89 Extreme Gastroptosis Cured by Rovsing's Operation. J. T. Rogers.—p. 745.
90 Autoserotherapy: Experimental Work with Hydroceles: Report of Cases. E. P. Merritt.—p. 747.
91 Double, Recurrent and Bilateral Tubal Pregnancies—Analysis of Cases. A. P. Heineck.—p. 749.
92 Influenzal Pneumonia in Pregnancy. Five Cases. F. A. Lupton. —p. 754.
93 Diseases of Nasal Accessory Sinuses. J. W. Murphy.—p. 756.
94 Treatment of Acute Infection of Accessory Nasal Cavities and Relation of Pathologic Conditions in Oto-Rhinology to General Medicine and Surgery. J. A. Stucky.—p. 757.
95 Tonsillar Infections as a Source of Systemic Disease. J. J. King. —p. 763.

84. **Dangers of Chenopodium Treatment of Uncinariasis.**—The extensive use of the oil of chenopodium in the treatment of uncinariasis makes a study of its untoward effect of real importance. Roth details the joint experience of several men in the medical wards of Santo Tomas Hospital, Panama. One hundred and three patients were given the oil. Twenty-nine showed signs of reaction. Dizziness, nausea and vomiting, headache, deafness and general depression were the symptoms observed. Deafness is by far the most disagreeable after-effect of the chenopodium treatment. It occurs in 20 per cent. of all the cases, varied in intensity from very mild to a complete loss of hearing, and lasts anywhere from one week to several months. In four of the cases, some deafness still persists two years after the date of treatment. No such reaction was observed after the administration of thymol in similar doses. Roth advises that the oil should not be administered unless there be ample facilities for studying the cases before and after administration. This should include a careful determination of the percentage of hemoglobin. Chenopodium should not be administered to a patient suffering from a high grade of anemia, nor should the treatment be repeated within ten days.

Southwestern Medicine, El Paso, Texas

September, 1918, **2**, No. 9

96 Homologous Corneal Transplant. A. Martin, Phoenix, Ariz.—p. 1.
97 Comparison of Ordinary Stomach Analysis and Fractional Method. M. Hilpert, Humboldt, Ariz.—p. 4.
98 Hospital Standardization. J. E. Bacon, Miami, Ariz.—p. 6.
99 Case of Removal of Epiglottis in Acute Tubercular Epiglottitis. M. Rodgers, Tucson, Ariz.—p. 10.
100 Importance of Laboratory as Aid to Correct Diagnosis. W. F. Chenoweth, Nogales, Ariz.—p. 11.
101 Argyrol Versus Bismuth Paste. H. Crouse, El Paso, Texas.—p. 14.

Surgery, Gynecology and Obstetrics, Chicago

November, 1918, **27**, No. 5

102 Ankylosis of Jaw. Report of Cases. M. S. Henderson and G. B. New, Rochester, Minn.—p. 451.
103 *Rôle of Ascariasis in Gall-Bladder Disease. J. Aviles, San Juan, Porto Rico.—p. 459.
104 Diagnosis of Ureteral Calculi. Report of Cases. D. N. Eisendrath, Chicago.—p. 461.
105 Subdiaphragmatic or Phrenic Abscess. Report of Case. E. Friend, Chicago.—p. 468.
106 *New Procedure for the Localization of Ureteral Stone. H. L. Kretschmer, Chicago.—p. 472.
107 *Loose Bodies in Abdominal Cavity. Report of Cases. M. Emmert, Omaha.—p. 474.
108 Development of Epiphysis. P. H. Kreuscher, Chicago.—p. 480.
109 Analysis of Work of Uterologist. R. L. Dickinson, Brooklyn.—p. 486.
110 Thirty Cases of Cesarean Section. K. C. McIlwraith, Toronto, Ontario.—p. 495.
111 *Studies in Paleopathology. R. L. Moodie, Chicago.—p. 498.
112 Mechanical Treatment of Peripheral Nerve Injuries. B. Stookey, Ann Arbor, Mich.—p. 510.
113 Need and Value of Biopathologic Standardization. W. C. MacCarty, Rochester, Minn.—p. 523.
114 *Suture of Blood-Vessel Injuries from Projectiles of War. C. Goodman, France.—p. 528.
115 *Safeguard in Inguinal Route Operations for Femoral Hernia. M. W. Ware, New York.—p. 530.
116 Autoplastic Nerve Transplantation in Repair of Gunshot Injuries. L. Mayer, New York.—p. 530.
117 *New Method for Relief of Lateral Tension in Cleft-Palate Operations. M. N. Federspiel, Milwaukee.—p. 532.
118 *Placental Tissue as Galactagogue. E. L. Cornell, Chicago.—p. 535.
119 Removal of Ureteral Stones by Aid of Operating Cystoscope; Report of Cases. E. P. Merritt, Atlanta, Ga.—p. 538.

103. **Rôle of Ascariasis in Gallbladder Disease.**—Aviles cites the case of a woman who for 26 years had been suffering from attacks of colic-like pain over the right upper quadrant of the abdomen, and occasionally she vomited stomach secretion mixed with bile. On some occasions she expelled round worms with the vomiting, and in one instance, the vomiting of an ascaris relieved the pain. A probable diagnosis of cholecystitis with calculi was made. Cholecystotomy was performed. The walls of the bladder were hypertrophied, but no rugosity of the mucosa was evident. Aviles did not find any calculus, but a big *Ascaris lumbricoides* about 8 inches in length, partially obstructing the cystic duct. The operation was completed by draining the gallbladder. The patient made an uneventful recovery and all the symptoms existing previous to the operation disappeared. Antihelminthic remedies were administered during the convalescent period.

Aviles points out that an individual who is seized with hepatic colic-like pain, accompanied with vomiting of *Ascarides lumbricoides*, has the syndrome necessary for suspecting that the case is one of migration of the parasite or parasites into the biliary ducts or gallbladder; and unless the symptoms subside, surgical intervention is indicated. Antihelminthic remedies must be administered as a prophylactic measure in those cases in which a history of ascariasis accompanies disorders of the gastrohepatoduodenal system. In those cases in which surgical intervention has been practiced, antihelminthic remedies must be given to avoid new serious complications.

106. **Localization of Ureteral Stone.**—The method described by Kretschmer was suggested by E. Ball. In a case in which a diagnosis has been made of possible ureteral stone, the shadowgraph catheter is passed in the usual way. A roentgen exposure is taken with the catheter in place. A second exposure is made on the same plate without changing the position of the patient or without changing the position of the plate, but by changing the position of the tube, so that a double exposure on one plate is obtained. This method is not new in radiography, as it has been employed in the localization of foreign bodies in various parts of the body.

107. **Loose Bodies in Abdominal Cavity.**—The loose body which was removed from the region to the right of the midline and anterior to the true pelvis in Emmert's case was almond-shaped, 3 cm. long, 2 cm. in breadth, and 1.5 cm. in thickness. It weighed 50 grains. It was light brown in color and covered with a grayish secretion. There was no evidence of a vestigial pedicle or adhesion. On one side was a calcified plaque occupying about one third of the surface. The consistency was rather firm. The body cut with a grating sensation and revealed a distinct capsule about 1 mm. thick enclosing a finely granular material of a yellowish brown color. Interspersed in this were several small particles of a hard, colorless material. No definite nucleus was seen. The contents of the capsule gave a very strong positive guaiac test for blood. Under the microscope it was seen to be composed of fat droplets, crystals, and blood corpuscles. The capsule was in such a state of disintegration as to prevent a diagnosis of the tissue.

111. **Studies in Paleopathology.**—A considerable number of intensely interesting as well as instructive references are given by Moodie to show that the remains of fossil man and

extinct animals show evidences of diseases which are comparable to recent lesions. Indications of disease are rare compared with the abundance of remains of ancient races. This may indicate that disease was not so prevalent in the past as at present, although it must be remembered that the evidence is all skeletal. Some of the lesions seen on fossil and subfossil remains are: osteoma, hemangioma, fractures, callus, osteoperiostitis, necrosis, caries, alveolar pyorrhea, hyperostoses, osteomalacia, spondylitis deformans. These and many other interesting lesions show that disease is no new thing but has been manifest in a diversity of forms for many millions of years.

114. **Suture of Blood-Vessel Injuries from Projectiles of War.**—According to the statistics gathered from various operators engaged in service in the front area with the British forces, Goodman says all seem agreed that gangrene follows the ligation of the popliteal artery in a very large percentage of cases. When gangrene does not supervene, however, the patient frequently suffers from the concomitant symptoms of an impaired circulation. In the five cases cited, wounds of the vessels (3 popliteal and 2 femoral) repaired by suture showed an early and satisfactory restoration of patency, and gangrene from an insufficient blood supply was thus warded off. Goodman suggests that the failures in many of the cases reported may have been due to neglect of one or more of the essential points of the operation, which are: 1. A high degree of asepsis. 2. The segment of vessel to be sutured must be freed from all macroscopic blood and properly protected from all contact during the suture. 3. The sutures must not be introduced under too great tension. 4. Thrombosis is favored by bacterial infection, and by the tissue juices with their ferments. The lumen of the vessel to be sutured should, therefore, be washed thoroughly with Ringer's or saline solution, followed by liquid paraffin. Sutures introduced under tension may cut out and induce hemorrhage. When a main artery is completely severed, a circular suture should not be attempted unless the severed ends can be approximated without tension. When this is not possible, a segment of vein can be transplanted, or when such a procedure is not practical a paraffined tube may bridge the gap and maintain the blood supply until an enlarged collateral circulation is established. The tube should then be removed.

115. **Safeguard in Inguinal Route Operations for Femoral Hernia.**—When the bowel is strangulated or incarcerated, Ware divides the constriction from within by means of a fine silk thread. This thread can be passed by means of a Deschamp needle or any needle sufficiently blunted, or by means of the eyelet of a fine silver probe. By gently whipsawing the thread, a very exact and partial division of the fibers of Poupart may be executed, which can never injure the intestine, and sometimes the slightest excursion of the thread will be sufficient to reestablish the circulation of the intestinal contents and render the reduction of the intestine possible. The thread may even be used as a tractor during the reduction. Thereafter it is divided and withdrawn.

117. **Relief of Lateral Tension in Cleft-Palate Operation.**—In order to prevent the cutting of the suture through the soft tissue, Federspiel has devised a new tension plate which will prevent the suture from cutting out and at the same time relieves the tension as well as renders the palatal tissues inflexible. These plates are made from noncorrosive metal, B. I. B., American gage 22, in various sizes and types. In order to fit these plates, it is necessary to make a small incision near the gingival border of the last molar, being careful not to cut the palatine artery. The incision should be of sufficient length to permit the flange of the plate to enter and lie between the palatal bone and soft tissue. Previous to fitting these plates it is necessary to pass silver wire (American gage 24) through the mucoperiosteal flaps and then through the holes in the plates. The ends of the wire are then passed through perforated lead shot and made tense by pulling the wire and crushing the shot, after which the borders of the flaps can be approximated without tension. After this is done, Federspiel denudes the border of the cleft and places and ties the coaptating sutures after the McCurdy method.

118. **Placental Tissue as a Galactagogue.**—The value of placental tissue as a galactagogue is endorsed by Cornell. He says that 87 per cent. of the babies whose mothers had received placental tissue began to gain on the fourth and fifth days, against 69 per cent. whose mothers did not receive the medication. Forty-four per cent. regained their birth weight before leaving the hospital against 24 plus per cent.

United States Naval Medical Bulletin

Hospital Corps Supplement, October, 1918, No. 7

120 Dental Anatomy. G. M. Damon.—p. 7.
121 Class of Instruction for Hospital Corps, Naval Reserve Force, First Naval District. J. F. Durkin.—p. 14.
122 Training School for Hospital Apprentices at the Boston City Hospital. J. A. Foley.—p. 15.
123 Shock. G. F. Cottle.—p. 25.
124 Pandemics. C. L. Fox.—p. 30.
125 Removal of Foreign Bodies from Cornea and Conjunctiva. A. H. Cecha.—p. 31.
126 Revision of Supply Table of Medical Department, 1918. O. G. Ruge.—p. 35.
127 Statistical Reports. J. Holden.—p. 40.
128 Value of Form F Card and Form I in Compiling Statistics. J. T. Cassady.—p. 45.
129 Waste of Surgical Dressings. H. Rydeen.—p. 48.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Oct. 19, 1918, No. 3016

1 *Preventive and Curative Treatment of Gas Gangrene. By Mixed Serums. F. Ivens, London.—p. 425.
2 Treatment of Pneumonia. D. E. Dickson, Edin.—p. 427.
3 Lobar Pneumonia Complicated by Pleurisy Treated with Polyvalent Serum (Paue). A. C. Guthrie, Edin.—p. 428.
4 Ablation of Labyrinth in a Case with Ménière's Symptoms. C. Yorke, London.—p. 429.
5 Case of Acute Yellow Atrophy. A. C. Roxburgh.—p. 430.
6 Curative Effects of Kharsivan and Neo-Kharsivan in Diseases other than Syphilis. G. S. Taylor, Liverpool.—p. 431.
7 Adenoma of Small Intestine in an Infant, with Resulting Volvulus. J. S. Manson, Edin.—p. 432.
8 Work of a Venereal Disease Clinic. O. L. Rhys.—p. 432.

1. **Treatment of Gas Gangrene by Mixed Serums.**—Convinced by previous experience of the curative value of the antiperfringens serum prepared by Weinberg and Sequin at the Pasteur Institute, Ivens tested the preventive use of antigangrenous serum. From March 21 to September 6, 1918, 3,660 recently wounded received their first operative treatment in the hospitals under his care, and the results obtained are set forth in this paper. Ivens has employed in three series of cases: (a) the mixed serums antiperfringens, antivibrion septique, anti-oedematiens, prepared by Weinberg and Seguin. (b) the polyvalent serum of Leclainche and Vallee. (c) a combination of the two.

Antigangrenous serums were given preventively in 433 cases, all of a severe type, including nearly 300 fractures, many cases already presenting one or other of the clinical signs of gas gangrene, such as crepitation, discoloration of muscle, bronzing of skin, edema, and bad odor. A large number were cases of wounds of the lower limbs. Nearly all patients were received within the first twenty-four hours after being wounded. The serum, given subcutaneously in dilution, Ivens believes has averted the anaphylactic phenomena which have been observed in cases in which this method of procedure has not been followed. When the mixed serum was given at or before the first operation (222 cases), no patient died from gas gangrene, although there were nineteen deaths out of the number from the effects of shock, from multiple fractures, hemorrhage, meningitis, or streptococcal septicemia. In fourteen of these cases the serum was administered at the same time that amputation was performed for massive gas gangrene. Of these fourteen patients, twelve recovered. The two fatalities occurred at the end of a fortnight from streptococcal septicemia, all signs of gas gangrene having disappeared for more than a week. In a very large number of cases the administration of mixed serums has permitted conservative treatment to be adopted instead of the amputation which would otherwise have been inevitable.

The value of this serum as a disintoxicating agent has been proved in several cases. Its administration has made it possible to wait for some hours until the condition of the patient has improved sufficiently to allow of surgical measures being employed. Infected cases, where mixed serum was omitted either by accident or from the meager supply, have not done as well as other cases in which the patients made a good recovery.

Polyvalent serum was used in 154 cases, nineteen were fatal, six of the deaths being due to gas gangrene; three had also a concurrent streptococcal septicemia. In fifteen of the 154 cases amputation was performed for massive gas gangrene, with eleven recoveries and four fatal results. Of these fatal cases, two were also associated with streptococcal septicemia. It was generally noticed during the period in which the polyvalent serum was given preventively that, except in gas gangrene, the cases seemed to run a straightforward course, without severe streptococcal infections, and that secondary operations on this score were infrequent. Among fifteen cases of streptococcal septicemia, only four had received preventive doses of this serum. Seven patients who had all been treated with fairly large doses of polyvalent serum recovered.

In a third series of cases (fifty-seven) 10 c.c. of polyvalent serum were added to the initial dose of 30 c.c. of mixed serum. Although in ten of these cases gangrene was already present in the form of cellulitis or abscess, in only one did massive gas gangrene develop, namely, after ligature of the external iliac artery, fifteen days after the preventive dose of mixed serum had been given. Two cases were fatal in this series. Although many of these patients had badly infected fractures of the lower limb, only three sustained amputations, one for streptococcal infection, two for secondary hemorrhage. Not only has it been possible in these cases to adopt conservative lines in fractures of the diaphysis, but, in addition, wounds involving the articulations—hip, knee, shoulder, ankle and tarsus—have run an unusually favorable course. In secondary operations, where latent microbes in sequestra so often cause a disappointing result (secondary suture, reamputation, etc.), a preventive dose of polyvalent serum and mixed serum has been found useful.

Glasgow Medical Journal

October, 1918, **8**, No. 4

9 *Lethargic Encephalitis: Report of Cases.* L. Findlay, Glasgow.—p. 193.
10 Treatment and Prognosis of Nephritis. W. Watson, Glasgow.—p. 205.
11 Surgical Importance of Cerebellar Amygdale. W. J. Moore.—p. 216.

Journal of Tropical Medicine and Hygiene, London

Oct. 15, 1918, **21**, No. 20

12 Frequency of Lactose Fermenters in Sierra Leone Waters. W. A. Young.—p. 205.
13 Susceptibility of Antiscorbutic Principle to Alkalinity. A. Harden.—p. 205.

Lancet, London

Oct. 19, 1918, **2**, No. 4964

14 Gunshot Wounds of Joints. Part II. Treatment of Wounds of Individual Joints. J. Campbell, Liverpool.—p. 509.
15 Outbreak of Scurvy in South African Native Labor Corps. H. W. Dyke, Glasgow.—p. 513.
16 *Case of Absence of All Sensation. E. D. Roberts, Lausanne.—p. 515.
17 Prevention of Relapse of Hysterical Manifestations. T. A. Ross, Edin.—p. 516.
18 Abdominal Evacuation of Pregnant Uterus Before Viability. V. Bonney, London.—p. 518.
19 *What the War has Taught Us About Tetanus. L. Bazy.—p. 523.
20 *Tetanus Consecutive to Superficial Wounds and to Trench Foot. Prof. Raymond.—p. 526.

Oct. 26, 1918, **2**, No. 4965

21 Harveian Oration: Doctrine of Consumption in Harvey's Time and To-Day. P. Kidd, London.—p. 543. (To be concluded.)
22 *Standardization of Wassermann Reaction. W. D'Este Emery, London.—p. 547.
23 *New Technic of Heart Massage: Case of Resuscitation. T. C. Bost and A. Neve.—p. 552.
24 Modification of Webster's Test for the Presence of T. N. T. in *Urine.* F. Tutin.—*p. 554.*
25 *"Acute Yellow Atrophy" (?) In a Munition Worker with a Pseudo T. N. T. Urine Reaction Due to Rhubarb. E. Glynn, London.—p. 555.

16. **Case of Absence of All Sensation.**—Roberts cites the case of a soldier, aged 37, far removed from the neurotic or hysterical type, whose family and personal history is negative, except for an attack of yellow fever at the age of 17. Since then he has noted absence of all sensation. There is complete absence of both superficial and deep tactile sense over the whole skin surface, and also over mucous membrane, where attainable. There is no consciousness of deep vibration. He does not feel the ground with his feet, and experiences difficulty when walking at night. He says that his inability to bring his heels together at the command "Attention" without controlling the movement with his eyes has frequently led him into trouble with his drill sergeant. There is complete inability to recognize objects placed in the hand when the eyes are shut. Sense of pain is completely absent. He underwent the radical cure of double inguinal hernia without anesthetic of any kind, being totally unconscious of any sensation either of pain or touch. He never suffers from headache, toothache, abdominal or other visceral pain of any description. The cornea shares in the general anesthesia. Thermal sensation is also absent. There is no perception of temperature in food or drink. There is insensibility to atmospheric changes of temperature.

The muscular sense appears to be completely absent. With the eyes closed, if asked to make any movement with his arms—the choice of movement being left to him—he is incapable of doing so, saying he cannot tell if his arms are moving or not, and all he can accomplish is a slight convulsive twitching of the hands and arms. On the other hand, if, when standing upright, with closed eyes, he be told to walk toward the observer he does so without trouble. He is a good swimmer. The sense of position is absent. He exhibits the phenomenon of the fixation of the limbs in the positions in which they are placed. Sense of taste is completely absent. The sense of smell is practically nonexistent. The fumes of the strong solution of ammonia and of pure hydrochloric acid produce a faint sensation of an odor which the patient remembered to have smelt in his youth.

The only response on both sides to plantar irritation is slight abduction of the little toe. The patellar reflexes were present and normal. The orbicularis palpebrarum muscles contracted on touching the cornea, though no sensation was evoked. The pupils reacted to light and accommodation. The bowels usually act regularly once a day. There is no conscious desire to defecate beyond what he describes as an occasional "rolling" in the abdomen. He never makes any effort, nor is there knowledge of the passage of the feces. Only when there is looseness of the bowels is there any incontinence. Micturition ordinarily occurs during action of the bowels once in twenty-four hours at about 8 o'clock in the morning. There is never a desire to micturate.

Finally, he seems to be without most of the common emotions. He is without family affection. He makes neither friends nor enemies. He has no love of country or home, but he is a smart and efficient soldier and takes a pride in it. The diagnosis of syringomyelia combined with hysteria is suggested as one which seems to meet the case.

19. **What War Has Taught Us About Tetanus.**—Bazy says that the war has shown that: 1. Antitetanic preventive serotherapy is efficacious in the immense majority of cases. 2. When it acts incompletely it so modifies the course of tetanus that it has created new forms of the disease, unknown before its use was general. 3. The study of the check to serotherapy ought to lead (*a*) to use the serum in a more rational way; and (*b*) to know how to complete its action by that of an antitetanic vaccination. The pathogenic medication is the injection of antitetanic serum. The intracerebral route, supported by Roux and Borrel, has been almost abandoned. The intrarachidian route seems of little practical use. Of all the methods it seems that one alone may be

sufficient and free from all criticism: that is the subcutaneous method. But, pathogenic medication, powerful though it is, has need of being completed by symptomatic medication, which is directed to the nervous phenomena. The alkaline persulphates possess in the highest degree the power of destroying the tetanic poisons. A solution of procain, 1.5 per cent., with the addition of a drop of epinephrin, 1:1,000, injected at the level of the brachial plexus for the upper limb, at the point of emergence of the sciatic for the lower limb, and in the vicinity of the nerve trunks controlling the groups of the contractured muscles, has given in all cases most encouraging results.

Bazy has employed as vaccine an iodized toxin, the same as is used at the Institut Pasteur to prepare the horses providing serum. The power of the toxin is such that 1/10,000 c.c. sufficed to kill a guinea-pig of 400 grams. On mixing this toxin with an iodized solution (iodin 1 gm., iodid of potassium 2 gm., distilled water 200 gm.), in the proportion of two thirds of toxin to one third of iodized solution, there is obtained a liquid neutral for the organism, but yet capable of vaccinating it. There can easily be injected the first time 4 c.c. of iodized toxin, the second time 8 c.c., and the third time 12 c.c. It is possible to increase further the number and dose of the vaccinal injections, which are remarkably well borne and provoke neither local nor general phenomena.

20. **Tetanus Consecutive to Superficial Wounds and to Trench Foot.**—Raymond cites two cases of tetanus consecutive to a very superficial wound, so superficial that the wounded man did not present himself for treatment, and consequently did not receive preventive injection of antitetanic serum. The treatment was based on: 1. Excision of the wound. This was carried out as in the case of a malignant tumor, by circumscribing very widely the whole region of the wound. The object was to remove the tetanigenic germs with the tissues which contained them, without causing the penetration, by way of the operation wound, of tetanic toxin into the circulation. 2. The excision of the wound having suppressed all new access of tetanic toxin, it only remained to combat the toxin already fixed in the tissues.

Serotherapy in high doses gave excellent results. The doses employed were 100 c.c. of serum each day by the subcutaneous route. The injections were continued until the infection was overcome, that is to say, from ten to fifteen days. Tetanus in trench foot is always grave, and almost all the cases have been fatal. If systematic amputation of the feet is avoided, as Raymond says it should be, it is of importance to comply with the following rules: 1. To make in all cases a prophylactic injection, as early as possible, of 20 c.c. of antitetanic serum. 2. To repeat this injection, in all the cases where there has been loss of substance of the integuments, phlyctenae or eschar, at the end of eight days. 3. Not to fear, in the grave forms with extensive gangrene, infective manifestations, to increase the doses and inject 30 c.c. and more. 4. To make an injection of 10 c.c., at the least, every eight days as long as there exist sphacelated tissues, necrosed or suppurating zones—in short, as long as the wound is not in the way of definite cicatrization. 5. Not to allow an interval of more than eight days between each injection of antitetanic serum, alike to assure the continuity of the antitoxic treatment and to avoid seric or anaphylactic accidents. Thanks to this practice Raymond has had only the two cases of tetanus among several hundred serious cases treated.

22. **Standardization of Wassermann Reaction.**—Emery suggests that the Wassermann reaction should be reported in terms of Wassermann "units," the figures given by each laboratory being the same whatever the technic, and such as will indicate the number of times the serum is stronger than the weakest serum which will just give definite proof that the patient has syphilis. He suggests also that until further experience is obtained the absorption of two clear units of complement, tested in the manner described in detail in his paper, shall be regarded as a standard unit.

23. **New Technic of Heart Massage: Case of Resuscitation.**—A horizontal incision behind the left costal margin is advocated by Bost and Nerve. The abdominal incision is made 4 inches long in the median line, extending from above the umbilicus well up into the xiphosternal notch. The left costal cartilages are well retracted, bringing the anterior diaphragmatic insertion well into view. A 2 inch incision, begining 1 inch to the left of the median line, carried outward behind the costal margin, cuts the fibers of the diaphragm near their insertion. A blunt instrument pushed in opens the pleural cavity, and the opening is rapidly dilated with two or three fingers of the right hand, so that the whole hand can then be passed into the thoracic cavity anterior to the pericardium. The hand is passed upward, the thumb behind the sternum and the fingers embracing the entire organ in the pericardium. The thumb compresses the right auricle and ventricle, and the base of the heart is effectively massaged. No vessels are injured in this incision, as the superior epigastric artery is internal to the incision and passes into the rectus muscle, and the musculophrenic branch enters the diaphragm through the cellular tissue behind the eighth or ninth costal cartilages and passes backwards, deeper than the incision. The liver and stomach, even if prominent, offer no obstruction to this route, nor is the pericardium in risk of being opened. During the massage the parts can be pressed round the wrist of the operator so that air is not sucked in, and there is no tendency to collapse of the lung.

25. **"Acute Yellow Atrophy" (?) in a Munition Worker with a Pseudo T. N. T. Urine Reaction Due to Rhubarb.**—Glynn cites the case of a young woman munition worker, previous health always good, died suddenly of acute toxic jaundice (?) nine months after leaving the T. N. T. filling room. The liver, however, was much larger, more fatty, and more necrotic than in T. N. T. poisoning, and regeneration was absent. Poisoning with phosphorus or arsenic was excluded; latent T. N. T. poisoning with or without bacterial infection was almost excluded; spirochetosis icterohemorrhagica was excluded. Death was therefore probably due to "acute yellow atrophy." The pseudo T. N. T. reaction in the patient's urine was evidently due to rhubarb, rhubarb and soda having been given the patient before Glynn saw her.

Medical Journal of Australia, Sydney

Sept. 21, 1918, **2**, No. 12

26 Occurrence of Sparganum (Larval Cestode) in Subcutaneous Tissues of Man in Australia. J. B. Cleland, Sydney.—p. 239.
27 Clinical and Microscopic Appearances of Carcinomatous Tumors of the Breast. H. C. Rutherford-Darling,—p. 240.

Sept. 28, 1918, **2**, No. 13

28 Significance of Stammering and Stuttering, with Corrective Measures. T. G. Leary, Edin.—p. 259.
29 Some Cases of Stammering from War Shock Treated by Psychotherapy. C. G. Godfrey, England.—p. 262.

Annales de Médecine, Paris

1918, **5**, No. 4. Pub'd September, 1918

30 *Colloidal Nitrogen in Urine. M. Labbé and R. Dauphin.—p. 314.
31 *Lumbar Puncture in Nervous Shock. W. Mestrezat and others. —p. 327.
32 *Oculocardiac Reflex in Pleurisy. A. Mougeot and J. Colombe. —p. 345.
33 *Functional Tests of the Heart. C. Lian.—p. 358.
34 *Amebiasis on French Front. M. Bloch and C. Mattei.—p. 374.
35 *Suprarenal Treatment in Tuberculosis. R. Porak.—p. 404.

30. **Colloidal Nitrogen in the Urine.**—Labbé and Dauphin tabulate the findings from forty-one persons with various diseases and from six normal subjects. The normal average for the colloidal nitrogen was 0.128, and for the proportion of the colloidal to the total nitrogen, 1 per cent. Increase in the colloidal nitrogen is evidently an index of disturbance in nitrogen metabolism; it is pronounced in all forms of liver disease, and thus may serve in diagnosis of hepatic insufficiency. With cirrhosis of the liver, it sometimes reached 5.5 per cent. of the total nitrogen, and 6.6 with cancer of the liver. It was highest in some cases of severe diabetes, reaching 7 per cent. in one case with coma imminent.

31. **Lumbar Puncture with Nervous Shock.**—The lumbar puncture fluid was found abnormal in about 80 per cent. of fifty cases of shell concussion of the nervous system. The typical finding was the presence of from 0.35 to 1 gm. of albumin to the liter without other cell or chemical abnor-

mality, except hypersecretion. This high albumin content appears in two or three days and does not subside for weeks or months or may persist indefinitely. It testifies to the organic injury from the concussion.

32. **Oculocardiac Reflex with Pleurisy.**—Study of 37 cases of serofibrinous pleurisy, three of hemorrhagic pleurisy, five of hemothorax, three of old cured pleurisy and two of pleurisy with mediastinal lesion, confirms that the pleurisy is liable to upset the balance between the vagus and sympathetic systems. The vagus is usually the one overpowered by the other system, and this opens the portal to various serious complications.

33. **Functional Tests of the Heart.**—Lian ascribes great importance to acceleration of the pulse after a brief effort, and the length of the interval before it returns to its former rate. A one-minute run, or gymnastic treading, two a second, on the same spot, may speed up the pulse to 120 or 130, but in the normal it returns to its former figure in one or two minutes. With the heart incompetent, the acceleration of the pulse is more pronounced, and it takes longer for it to subside. If this is observed on several repetitions of the test, the heart must be considered below par.

34. **Amebiasis in France.**—Bloch and Mattei emphasize the necessity for curing carriers of amebas in the encysted form in particular as they are a source of danger to themselves as well as to others. Emetin is the main reliance but it must be given in adequate doses, although not surpassing 1 gm. as the total dose. Arsphenamin preparations may likewise prove effectual. They have examined more than 500 men with amebiasis among the active troops in France, and all but 10 per cent. of the men had never been out of France. Most of the cases were encountered in 1916; the number has been progressively declining since then. Only about 30 per cent. of the cases presented the typical symptoms of dysentery; in the others the disease might have been overlooked or ascribed to other causes if it had not been for the systematic examination of the stools. About 70 per cent. of the cases were mild, but 5 per cent. were extremely serious and tenacious.

35. **Suprarenal Treatment.**—Porak discusses the action of the medulla of the suprarenal in contrast with that of the cortex, especially when applied in treatment of the tuberculous. In two cases described there did not seem to be any reason for connecting the low blood pressure with medullary suprarenal deficiency as necropsy failed to show abnormal conditions in the suprarenal medulla. In studying the effect of suprarenal treatment he urges that not only the immediate action but the curve of the arterial pressure from day to day over the entire period of treatment and for a time afterward should be recorded. In his clinical and experimental experience, continued suprarenal treatment seemed to induce a certain depression of the heart systole and spasm of the peripheral vessels (reduction of the differential pressure). A rise in the minimal pressure in the course of treatment with suprarenal medulla is a very important symptom, indicating that the treatment must be stopped. All the experiences to date confirm that the medulla and the cortex of the suprarenals are in reality two distinct organs. They also warn that the blood pressure-raising property of the suprarenal cortex may be maintained even in Addison's disease, so that the low blood pressure cannot be ascribed to cortex insufficiency as a matter of course.

Bulletin de l'Académie de Médecine, Paris

Sept. 24, 1918, **80**, No. 38

36 *Certain Causes of Optical Illusions. Prompt.—p. 266.
37 *Welfare Work for Mothers and Infants. Chaptal.—p. 267.
38 *Overlooked Septicemias.—De Gauléjac and Nathan.—p. 269.

36. **Physiology of Optical Illusions.**—Prompt discusses the accommodation for perspective, the perception of objects in relief, of the acute angle, etc. His conclusions as to certain features of physiologic vision suggest an explanation for a number of optical illusions, including the "canals" on Mars.

37. **Welfare Work in a Poor District in Paris.**—The efforts described have reduced the infant mortality to 2.5 per cent. The total expense has ranged from less than $300 the first year (1901), to $9,085 last year. There are over 79,000 inhabitants in the quarter, and 80 per cent. of the infants were artificially fed when the work was begun.

38. **Overlooked Septicemias.**—Summarized in Paris Letter, p. 1676.

Bulletins de la Société Médicale des Hôpitaux, Paris

July 19, 1918, **42**, No. 26

39 *Meningococcus Purpura. A. Netter and M. Mozer.—p. 773.
40 *Case of Pulmonary Sporotrichosis. E. Schulmann and A. Masson.—p. 776.
41 Malaria plus Echinococcus Cysts in Liver. R. Porak.—p. 780.
42 *Polyneuritis Consecutive to Arsenobenzol Treatment. Variot and Bouquier.—p. 783.
43 *Dyspeptic Coma with Acidosis. M. Labbé.—p. 786.
44 *Alcohol in Cerebrospinal Fluid. E. Lenoble and F. Daniel.—790; Id.—p. 793.
45 *Serodiagnosis of Syphilis. H. Eschbach and E. Duhot.—p. 794.
46 Liver Form of Spirochetosis. Manine.—p. 799.
47 *Folds and Fissures in Tongue. G. Railliet.—p. 802 and 804.

39. **Meningococcus Purpura.**—In a postscript to this article, Netter states that the culture features of the microbe cultivated from the infant's spinal fluid during life suggested the *Micrococcus crassus* rather than the meningococcus, and no appreciable signs of meningitis were detected at necropsy. The septicemia evidently preceded the invasion of the cerebrospinal fluid by the microbes, and such cases are becoming common, so that it is not unusual to encounter an apparently normal lumbar puncture fluid. He comments also on the increasing prevalence of purpura with meningococcus infections. In 181 cases of meningitis, 1908 to 1914, there were 2.7 per cent. with purpura, while the proportion has steadily increased since then to 29.7 per cent. in his latest series of 15 cases, out of the total 173.

40. **Pulmonary Sporotrichosis.**—The workman of 43 presented signs of pulmonary sporotrichosis seven years after apparently complete recovery under potassium iodid of a cutaneous mycosis. The cursory diagnosis had been pulmonary tuberculosis, but the right dulness suggested a pleural effusion. No fluid could be obtained by puncture, and radioscopy disclosed a large tumor in one lung with nodules elsewhere. The *Sporotrichum beurmanni* was cultivated from bloody fluid obtained by puncture in the tumor region. Schulmann and Masson know of only five cases of this disease in the lungs on record, and only in two of them was the sporotrichum cultivated direct from lung fluid. Its cultivation merely from the sputum in the other cases leaves a doubt as to the diagnosis.

42. **Polyneuritis After Arsphenamin Treatment.**—The child of 13 had been given intensive arsenobenzol treatment to ward off sympathetic ophthalmia after enucleation of one eye for glaucoma, with subsequent tumor formation in the orbit. He developed typical toxic polyneuritis and paralysis. Marie also reported the case of a girl of 13 with transverse myelitis after intensive arsenobenol treatment for manifestations of inherited syphilis.

43. **Dyspeptic Coma.**—Labbé's patient succumbed to fatal coma in the course of severe intestinal disease. There was pronounced acidosis, but this retrogressed toward the last. The reactions of acidosis were pronounced in the spinal fluid after they had disappeared from the urine. Inanition could not have been a factor as the man was getting adequate nourishment.

44. **Alcohol in Cerebrospinal Fluid.**—Lenoble and Daniel here present their third communication on this subject. It emphasizes that when alcohol gets into the cerebrospinal fluid it seems to persist there unmodified and indefinitely if aseptic conditions prevail. On the other hand, it promptly undergoes chemical modifications and rapidly disappears when asepsis is not observed, persisting at longest not over ten days. This has a medicolegal bearing in criminal cases. In a fourth communication they describe the precautions necessary for chemical examination of the fluid, and the effect on it of preceding administration of drugs.

45. **Serodiagnosis of Syphilis.**—Eschbach and Duhot advocate the use of fresh human serum, saturation of the hemolytic power, and control of the excess of alexin as indispen-

sable factors for precision in the Wassermann reaction or its modifications, as they explain in detail.

47. **Folds and Fissures in the Tongue.**—Railliet found that 188 of 308 soldiers had folds or fissures in their tongues, as also 10 of 41 children over 8. His findings suggest that ridges and grooves in the tongue may indicate the possibility of syphilis.

Journal de Médecine de Bordeaux

September, 1918, **89**, No. 9

48 *Factitious Dermatoses. W. Dubreuilh.—p. 247.
49 *Urinary Spirochetosis. J. Carles.—p. 255.
50 Metal Prostheses for the Skull. Bercher.—p. 259.
51 Paratyphoid Infections. H. Mallié.—p. 260.
52 *Iodin Fumes in Treatment of Chancre. Petges, Gratiot and Cottu. —p. 263.
53 Iodoform-Petrolatum for Chancrellous Bubo. Id.—p. 264.
54 Organization and Work of the Service de Santé. Darbouet.—p. 266.

48. **Factitious Dermatoses.**—Dubreuilh warns among other things that even an apparently firmly dressed lesion may be artificially aggravated by a wire worked in beneath, or by some caustic injected from a hypodermic needle. He protects against the latter by introducing a sheet of zinc foil in the dressing over the lesion. The soldiers guilty of these practices are given a month or two in the guardhouse, but lately one was condemned to five years of hard labor, and the authorities are now reinvestigating some of the other cases.

49. **Urinary Spirochetosis.**—Carles relates that in some of the six typical cases described the clinical picture was that of acute nephritis; in others, hematuria was the only symptom of the urinary spirochetosis. Microscopic hematuria was the rule in all. The urine should be examined for spirochetes whenever hematuria is encountered. Urine containing red corpuscles is a favorable culture medium for spirochetes. He insisted on isolation whenever spirochetes were found in the urine. In one of the cases described, the man had apparently quite recovered from his attack and returned to duty, but hematuria returned after vaccination against typhoid, and the spirochetes appeared anew in the urine.

52. **Iodin Fumes in Treatment of Soft and Open Chancre.**—Petges and his co-workers have applied *enfumage iodé* in 236 cases of soft chancre; in eighty complicated with hard chancre. The method was described in THE JOURNAL, Aug. 25, 1917, p. 678, and elsewhere. The simple devise they prefer is a flask in which a tablespoonful of iodoform is placed and heated. One of the fine tubes in the cork reaches nearly to the bottom of the flask and is connected with a rubber bulb. The other tube is short. The flask is heated over an alcohol lamp, and the fumes are blown through the second tube on the chancre, until its deepest crevices are stained with the rest and the skin around. The lesion should be cleared of pus and débris beforehand. The *enfumage* is repeated on alternate days until the ulceration is well on the way to healing. He dresses with iodoform likewise.

Paris Médical

August 31, 1918, **8**, No. 35

55 *Present Status of Splenectomy. E. Chabrol and H. Bénard.—p. 165.
56 *Pains of the Dyspeptic. F. Ramond.—p. 171.
57 Tardy Nevus. H. Gougerot.—p. 174.

Sept. 14, 1918, **8**, No. 37

58 *Anterior Pleurisy. Roubier.—p. 213.
59 *Radiotherapy of Cicatrices. A. Zimmern, P. Cottenot and A. Houdé.—p. 216.
60 Antisepsis for War Wounds. H. Lorin.—p. 220.

55. **Present Status of Splenectomy.**—The balance sheet for splenectomy in chronic splenomegalic jaundice shows only 10 per cent. mortality or, omitting the dubious cases, only 7 per cent. But time is demonstrating the frequency of inherited syphilis as a factor in this disease and also in splenic anemia, and the brilliant results of operative treatment should not cause this fact to be overlooked in treatment. In Banti's disease the mortality with splenectomy averages from 14 to 16 per cent.; before 1900 it was 44.4 and 31 per cent., and Chabrol cites American statistics that have brought it as low as 9.6 per cent. The splenectomies have thrown light on the functions of the spleen. In many of the patients the red corpuscles afterward returned not only to their normal number, but they regained normal resisting power. This latter new fact, Chabrol reiterates, confirms his previous assertions in regard to the spleen's being responsible for the excessive fragility of the reds. When the spleen enlarges, with no other symptoms than gastro-intestinal hemorrhages, it is possible that spleno-thrombosis may have been the primary derangement, and the enlargement of the spleen the consequence, and not the cause, of the obliteration of the spleen. Gilbert warns that gastro-intestinal hemorrhage may be the forerunner sign of venous cirrhosis of the liver. To remove the spleen to cure recurring hematemesis, as has been done recently, is certainly, Chabrol remarks, one of the most original interventions of recent years.

56. **Pain with Dyspepsia.**—Ramond reviews the indications afforded by different varieties of radiating and fixed pain in dyspeptics. He discusses their correct interpretation and the information thus derived.

58. **Anterior Pleurisy.**—Roubier describes the differential points in a case of pleurisy with an encysted serofibrinous effusion in the anterior mediastinum.

59. **Radiotherapy of Cicatricial Retraction.**—Zimmern has previously published the excellent results obtained in treatment of neuralgia by radiotherapy applied to the root nerve. With painful scars, the action is different; the rays evidently disintegrate the fibrous tissue. The latter is a pathologic form of normal connective tissue and, especially when newly formed, is susceptible to the action of the rays, like other pathologic and embryologic tissues. Any nerve fibers included in the cicatrix are relieved of compression as the fibrous tissue softens up, and thus scars that pain are promptly relieved. Even deep trunk nerves feel the effect, and sensory, motor, and trophic disturbances may retrogress. Laborde has reported rapid return of nerve functioning under radium treatment of paralysis of peripheral nerves. Others have reported cures under roentgen treatment of painful neuritis with spastic conditions, in causalgia, etc., the electric reactions returning to normal. Operative treatment was out of the question in one case described in which the nerves in the shoulder were embedded in a huge cicatricial mass. Under six roentgen exposures, a total of 30 H units, the cicatrix had become supple and the nerves gradually recuperated their functions, with even a beginning faradic reaction in the ulnar nerve. The action of the rays is more pronounced the more recent the formation of the cicatricial tissue. In conclusion, the importance is emphasized of prophylactic postoperative radiotherapy, to supplement an operation for liberation of a trunk nerve. Or it may prove useful to prepare the field for the operation, softening up the scar tissue so the nerves can be dissected out more readily. This "radiosurgical" technic is proving extremely useful. It seems scarcely probable that the nerve tissue could suffer from the exposures to the doses applied, as the nerve tissue is scarcely at all susceptible to the roentgen rays.

Presse Médicale, Paris

Sept. 26, 1918, **26**, No. 54

61 *Treatment of Purulent Pleural Effusions. T. Tuffier.—p. 497.
62 Albumin in Blood and Stools. M. Labbé and G. Canat.—p. 499.
63 Subjective Sequels After Concussion of the Brain. A. Mairet and H. Piéron.—p. 501.
64 Streptococcus Dermatitis Around Wounds. A. Desaux.—p. 501.

Oct. 17, 1918, **26**, No. 58

65 *Comminuted Fractures. R. Leriche and A. Policard.—p. 533.
66 *Acute Hepato-Nephritis. J. Tapie.—p. 534.
67 *Reduction of Angular Displacement of Fractures. Gentil.—p. 536.
68 *Bacteriology of Influenza. G. Vitoux.—p. 537.
69 *War Wounds of Nerves. H. Delagenière and others.—p. 537.

61. **Purulent Pleural Effusions.**—Tuffier advocates a technic which permits the lung to resume functioning at once. Eight illustrations show the various steps. With a persisting fistula, seven or eight rubber tubes stiffened with silver wire are introduced into the cavity, one pushed up into the space above the lung. Under screen control they can be introduced into the remotest recesses of the cavity. Carrel's method of sterilization is then applied, with daily respiratory

exercises to promote expansion of the lung. The excursions of the lung can be gaged by the amount of fluid that can be injected into the pleural cavity during inspiration and during expiration. When only one microbe is found in four fields, the Carrel tubes are withdrawn and the false membrane forming a shell over the lung and its sheet of pleura is shelled off—Delorme's decortication—and the lung expands at once. He gives the details of the forty-seven cases in which these principles have been followed. There were seven medical cases, and thirty-seven chronic and three recent war wound cases. All were cured.

65. **Extensive Comminuted Fractures.**—Leriche and Policard advocate complete excision, ensuring asepsis in the focus. This is followed by repair of the soft parts by retarded primary suture the third day. Fifteen or twenty days later they proceed to whatever grafting or other operation on the bone is deemed necessary to restore the strength of the shaft. In their nine cases of the kind they did a grafting operation in four cases: forearm and tibia, and osteosynthesis, in five: humerus, tibia or radius—all successful. Comparison of the results in these cases with those under other technics has abundantly proved the benefits of this speedy triple intervention.

66. **Acute Massive Hepatonephritis.**—Intense azotemia, anuria and aberrant myeloid reaction distinguished this case of nephritis with jaundice. The man was in the hospital for three months but finally recovered after a neuritis and multiple superficial abscesses. No spirochetes were found in blood or urine at any time, but the clinical picture resembled that of exceptionally grave icterohemorrhagic spirochetosis.

67. **Screw Reduction of Fractures.**—Gentil passes a wire around the limb and then applies continuous traction on the wire, perpendicular to the limb, by means of a thumbscrew in a small frame. The traction can be spread over a large area by interposing a plaster partial cast or arranging plaster collars above and below the site. Depage has applied the same principle with a cable and weight for fractures of the femur, but Gentil shows how it can be applied to angular and overlapping fractures, etc. It usefully supplements continuous traction and immobilization, restoring normal static conditions.

68. **The Microbe of Influenza.**—Summarized in Paris Letter, p. 1676.

69. **War Wounds of Nerves.**—These addresses by Delagenière, Delorme, Walther and others were delivered at the recent French Surgical Congress at Paris.

Revue Médicale de la Suisse Romande, Geneva

September, 1918, **38,** *No. 9*

70 *Restriction of Fluids in Cardiac Edema. J. Tchertkoff and F. Heim.—p. 509.
71 *Kaolin in Treatment of Cholera. V. Kuhne.—p. 555.
72 *Dyschondroplasia. E. Kummer.—p. 569.

70. **Reduction of Fluid Intake in Treatment of Cardiac Dropsy.**—This extensive report tells of fifty cases of cardiac dropsy systematically treated with reduction of fluid and of salt. This alone may restore conditions to clinically normal or, if not, it materially reenforces the action of heart and kidney tonics, restoring compensation except in the absolutely doomed cases. The Karell treatment is on the same principle, but it represents unnecessary deprivations. Tchertkoff and Heim gave a light nourishing diet of 2,000 calories but with only 700 or 900 gm. of fluid and no salt in the bread. The patients do not object to this diet for a week; after this it is modified to allow 1,500 or 1,800 gm. fluid and 2.5 gm. salt with 2,500 calories, but no meat. This fluid-poor and salt-poor diet is less distasteful the more pronounced the dropsy; that is, it is tolerated better, the more urgently it is needed. The weight, the daily diuresis, the rhythm and frequency of the pulse, the blood pressure and the refractometer findings in the blood were compared systematically in all the cases. All presented symptoms of edematous asystoly, dyspnea, cyanosis, congestion in lungs and liver, oliguria and dilatation of the heart. In eighteen, no drugs were required, and clinical balance was restored within the week by the dry diet and repose alone. The patients were from 30 to 80 years old. One lost 12 pounds in five days, and several voided 3,000 c.c. of urine in twenty-four hours, with an intake of fluid less than 600 or 800 c.c. All left the hospital with earning power restored. They report further three exceptionally severe cases in which the fatal outcome could not be warded off in this way, but improvement was marked even in these cases. In all the other cases, the dry diet had to be reenforced with drugs to act on heart and kidneys. They review the literature on the subject, and theorize to explain the efficacy of restriction of fluids. Salt has to be restricted likewise, to enable the patients to bear the reduction in fluids, and especially because the kidney functioning is usually below par in these cases. Repose is an important element in the treatment, perhaps the most important of all. The reason why this is not generally appreciated is because drugs are usually given at once, without waiting to watch the effects of repose and dieting alone. They make a point of refraining from drugs, even a purgative, during the first few days. If there is a tendency to uremia, the diet has to be poor in proteins.

71. **Cholera.**—Kuhne declares that with kaolin treatment the mortality of cholera was reduced from 45 or higher to 2 or 3 per cent. in his extensive experience in Serbia. All the other physicians had similarly favorable experiences, and the authorities provided large stores of kaolin for immediate use as occasion arose. This method of treating cholera, etc., by drinking large amounts of suspensions of kaolin was introduced by Stumpf several years ago, and has been repeatedly described in these columns. It is said to be entirely harmless, and given at the first symptoms cures in twenty-four hours. Kuhne reiterates that even apparently moribund cholera patients may be saved by it. If too weak to swallow, 3 liters of the constantly stirred suspension can be injected into the bowel. The kaolin is useful in all forms of diarrhea, so that even if the diagnosis has been incorrect, benefit will result. When skeptics protest against this *médication bolique,* Stumpf merely says: "When you have experienced what bolus alba is capable of, then you can talk, but not before."

72. **Ollier's Disease.**—Kummer gives a detailed illustrated report of a typical case of dyschondroplasia in a young woman.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Sept. *28, 1918,* **48.** No. *39*

73 *Superheated Air in Surgery. H. Iselin.—p. 1297.
74 Giant Blood Platelets. A. Fonio.—p. 1300.
75 Isolated Traumatic Paralysis of Suprascapular Nerve. J. Dubs.—p. 1305.
76 *The Swallowing Reflex from the Cornea. J. Strebel.—p. 1311.

73. **Superheated Air as Aid to Surgery.**—Iselin lauds the benefit from application of superheated air in treatment of acute inflammations, accidental wounds, and to promote drainage of the peritoneum. Applied at once after early surgical clearing out of the wound it wards off infection. He uses the ordinary hot air frame or cradle but has an electric device to heat the air.

76. **The Swallowing Reflex from the Cornea.**—Strebel has noticed that when the surface of the eye is bedrizzled with some indifferent fluid, such as saline, there is a reflex swallowing movement in addition to the reflex lid closing and the withdrawal movements. This swallowing reflex is apparent even in the newly born if cold water is used. He found it pronounced in 85 per cent. of 500 persons tested. Its absence indicates lack of sensibility in the cornea, and this was the case in eleven cases of herpes of the cornea in 1916 and also in a recent series of seventeen cases of influenzal herpes of the cornea. It was impossible to elicit the swallowing reflex in these cases.

Gazzetta degli Ospedali e delle Cliniche, *Milan*

July 18, 1918, **39.** No. 57

77 *Determination of Nitrogen in Urine. E. Pittarelli.—p. 555.

July 21, 1918, **39.** No. 58

78 *Traumatic Ankylosis of Jaw. A. Vecchi.—p. 563.

July 25, 1918, 39, No. 59

79 *Methylene Blue Reaction in the Urine. C. B. Farmachidis.—p. 574.
80 Treatment of War Wounds. G. B. Ricci.—p. 578.

77. **The Nitrogen in the Urine.**—Pittarelli describes an improvised apparatus with which it is possible to apply the Kjeldahl procedure to determine the "azoturic ratio," that is, the exact proportion of nitrogen eliminated in the urine in the form of urea.

78. **Ankylosis of Upper Jaw.**—Vecchi remarks that after a fall on the chin, temporomandibular ankylosis may develop on both sides, but with direct trauma it is unilateral, even when the jaw has been long immobilized. Forcible correction of the ankylosis is of little use as the ankylosis soon becomes established again. Even osteotomy does not give permanent results. He gives the details of a case to show the good and durable effect of resection with interposition of a muscle flap. Any operation of the kind should be done with everything ready for an emergency tracheotomy at need, but it is not necessary to make a preliminary tracheotomy if the tongue is fastened with forceps or a thread, so that the tongue cannot slip back into the throat. After the operation the jaw should be actively and passively exercised; a wooden wedge between the teeth is useful for this. These exercises have to be kept up for months and years as the tendency for exuberant callus production may long persist, especially in the young and vigorous.

79. **Methylene Blue Test for Bile Pigments in the Urine.**—Farmachidis states that methylene blue reveals the presence of bile pigments in the urine, by a change in tint to a grass green, on addition of 5 drops of a 1 per cent. solution of methylene blue to about 5 c.c. of the urine. If there is only urobilin present, the tint is more of an emerald green. With other substances in the urine the tint remains the unmodified blue.

Riforma Medica, Naples

August 17, 1918, 34, No. 33

81 *Genital Anomalies as Clue to Renal Anomalies. P. Guizzetti.—p. 646.
82 Suture after Cesarean Section. S. Delle Chiaje.—p. 649.
83 Hyphomycetes Develop in Wound Healing Under Carrel Treatment. L. Torraca.—p. 650.
84 Present Status of Puncture of the Brain. R. Falcone.—p. 655.
85 Histologic Findings after Pneumonia. G. Moscati.—p. 656.

Aug. 31, 1918, 34, No. 35

86 Present Status of Laryngeal Tuberculosis. V. Grazzi.—p. 686.
87 Congenital High Scapula. C. Guarini.—p. 689.
88 Institutional Treatment of Psychoneuroses. A. Salerni.—p. 691.
89 Present Status of Cranioplasty. E. Aievoli.—p. 693.
90 The Significance of the Habitus Phthisicus. A. Ferrannini.—p. 694.

81. **Coexistence of Renal and Genital Anomalies.**—Guizzetti found congenital anomalies in the kidneys in 6 of 1,187 female cadavers and in 9 of 1,653 males. In 7 of the total 2,840 cadavers, one kidney was missing. In a previous series reported, one kidney was missing in 39 of 20,000 cadavers. In his last series, in one-third of the 15 cases of renal anomalies there were also anomalies in the genital sphere. This suggested the possibility that the discovery of genital anomalies might turn the scale in favor of the assumption of some renal deformity in dubious cases. In 14 cadavers he found that the vas deferens on one side was missing, and in 4 others it was defective. In these 4 the anomaly could not have been detected by clinical examination, but in the others the absence of the vas deferens could have been readily ascertained by palpation of the spermatic funiculus. In this group of 14, the kidney on one side was missing in 7; in one there was a horse-shoe kidney, and in the other 2 the kidney was not in its normal place; only in 4 were the kidneys apparently normal at birth. Among 12 instances of one missing kidney, therefore, the vas deferens on that side was missing likewise. Palpation of the spermatic cord would easily have revealed this during life. Especially with normal ureter openings in the bladder, the discovery of anomalies in the vas deferens might prove the warning signal to prevent nephrectomy when there is only one kidney. Anomalies of the kidneys seem to be more frequent in men than in women. By comparing the palpation findings on the two sides it is a simple matter to detect the absence of the vas.

Revista Ibero-Americana de Ciencias Medicas, Madrid

June, 1918, 39, No. 166

91 *History of Medicine in Spain. E. G. del Real.—p. 401.
92 *Treatment of Gastric Ulcer. R. Luis y Yagüe.—p. 423.
93 The Epiphysis of the Olecranon. Riosalido.—p. 437.
94 To Distinguish Inorganic Heart Murmurs. A. N. Blasco.—p. 441.
95 Present Status of Endocarditis. A. Mut.—p. 453.

91. **History of Medicine in Spain.**—In this instalment, del Real discusses the work of Arab, Spanish Jewish and Benedictine physicians in the early history of Spain.

92. **Gastric Ulcer with Hypochlorhydria.**—Luis comments on the difficulty of treatment in these cases as the usual measures to combat hypochlorhydria are contraindicated by the ulcer. Milk and bismuth can be relied on, and possibly olive oil, given an hour before eating. Cases with good motor functioning and tendency to constipation are the ones that benefit most from this.

Revista de Medicina y Cirugia, Havana

Sept. 25, 1918, 22, No. 18

96 *Empyema in Child. R. M. Orihuela.—p. 499.
97 Life Work of Carlos J. Finlay. J. Le-Roy.—p. 501. Conc'n.

96. **Empyema in Child.**—Orihuela reports the case of a boy under 6 with remittent fever suggesting typhoid and also bronchitis and cough, but with scarcely any dyspnea. The left side of the chest bulged, and two liters of greenish pus were withdrawn and the cavity drained with large tubes. The operation was done under local anesthesia, without resection of ribs, and complete recovery speedily followed.

Revista de Medicina y Cirugia Practicas, Madrid

Aug. 14, 1918, 120, No. 1518

98 Medical Aphorisms. S. V. de Castro.—p. 161.
99 Prenatal Hygiene or Intra-Uterine Puericulture. J. J. de la Muela.—p. 163.

Vida Nueva, Havana

September, 1918, 10, No. 9

100 *Formation of Bone in Penis. A. G. Casariego.—p. 247.
101 Experiences with Laparotomies. E. R. Aragon.—p. 249.
102 *Anthrax Vaccine in Treatment of Leprosy. J. M. Campos.—p. 251.
103 Professional Ethics. O. Montoro.—p. 252.

100. **Formation of Bone in Penis.**—The man of 50 refuses to allow operative removal of the long narrow strip of bone tissue visible in roentgenoscopy. In another case there was induration of the corpora cavernosa but no actual bone formation; under roentgen treatment, the induration retrogressed. Neither of these men had had known venereal disease. In the following number A. Lutz relates that formation of bone in the penis is physiologic in certain species of monkeys, and cites considerable bibliography. He has never heard of a case in the human before.

102. **Treatment of Leprosy.**—Campos writes from Colombia to call attention to the "truly remarkable improvement" in two cases of leprosy in which an anti-anthrax vaccine was given systematically. The bacillus of lepra seems to be unable to survive the action of the toxins elaborated by the anthrax bacillus. He injected lepra patients with cultures of the anthrax bacilli. This seemed to modify the tissues in such a way that the lepra bacilli soon perished. The rapid improvement was paralleled by the disappearance of living bacilli from the field until no further active bacilli could be found in specimens of lymph and nasal secretions. Campos urges others to give this simple and inexpensive biologic treatment a trial. The dose each time was 0.5 c.c. of the liquid vaccine against bacterial anthrax, obtained from the Pasteur Institute.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

Aug. 17, 1918, 2, No. 7

104 *Glycolysis in the Blood. J. Hekman and A. van Meeteren.—p. 497.
105 Influenza. B. M. van Driel.—p. 513; J. J. van de Velde.—p. 517; G. F. Wesenhagen.—p. 521.
106 *Electric Reactions in Children. J. B. Stalling-Schwab.—p. 514.
107 Scarlatinal Ethmoiditis; Three Cases. W. Schilperoort.—p. 522.

104. **Glycolysis in the Blood.**—Hekman and van Meeteren describe a micromethod with which it is possible to estimate the sugar-splitting property of the blood. Over sixteen pages are devoted to the history of the subject, description of their research, and the results realized. Their technic is based on Bang's method, using 0.5 gm. sugar, dissolved, on Bang filter paper, drying at 100 C., adding 0.1 c.c. of blood, and leaving it in contact with the sugar for two hours. The sugar content of the blood is known and the difference between the findings before and after the test shows the amount of sugar that has been split. The paper is placed in a cylindrical glass, open at both ends; this is placed in a test tube, the lower end resting on a marble in the tube. A minute amount of blood answers for the test, and the whole blood is used; the findings corresponded always with those of other tests and methods. In order to ensure greater precision they improvised a device to regulate the gas pressure for the Bang titration procedure, as they describe.

Among the practical results obtained was the demonstration that the glycolysis in the blood is no index of pancreas functioning. The sugar-splitting property of the blood kept abnormally high in a dog after removal of the pancreas. In diabetes, the glycolytic power was abnormally low in the graver cases. By dividing the figure representing the sugar content of the blood, with the figure representing the glycolysis, we obtain a quotient which represents the sugar-splitting coefficient of the blood. This coefficient varies very little in normal persons, never going above 1.5 or below 0.7 in their experience, so that 1 may be accepted as the normal. In diabetes, this coefficient runs up very high, to 6 or above. Comparison of series of coefficients shows that this increased glycolysis is a compensatory function which strives to get rid of the excess of sugar in the tissues (including the blood). But this compensating process is not complete; the glycolysis does not increase parellel to the increase in the sugar content of the blood. Especially in the graver cases, this compensating function is defective, and sometimes there is no sign of it, the glycolysis figure being actually below the normal figure. This of course is an unfavorable sign; if the glycolysis increases under treatment this modifies favorably the prognosis.

The findings in cases of defective or perverted functioning of the thyroid, parathyroids and pituitary body also suggested the possibility that this abnormal functioning might be an important factor in the pathogenesis of diabetes. When glycosuria without ketonuria is encountered, and the glycolytic power of the blood is found abnormally low, the possibility of a thyrogenous or pituitary origin should be borne in mind. They expect to continue research on the influence of thyroid treatment, of epinephrin, etc., on the glycolysis in the blood, but at present they merely report the facts they have established, for some of which they have no explanation as yet to offer.

106. **Electric Tests on Children.**—Stalling-Schwab reports from the Emma Children's Hospital at Amsterdam the findings with electric tests applied to thirty-nine children free from manifestations of spasmophilia, and to forty-eight who presented symptoms of tetany. She compares the findings with what others have reported in this line. They confirm that these two groups of children respond quite differently to electric tests, and also to treatment by dieting and calcium, phosphorus and cod liver oil.

Hospitalstidende, Copenhagen

Aug. 21, 1918, **61**, No. 34

108 *Operative Treatment of Tuberculosis of the Spleen. E. Petersen. —p. 1105. Comenced in No. 33, p. 1073.

108. **Tuberculosis of the Spleen.**—Petersen insists on the necessity for removal of a tuberculous spleen at the earliest possible moment, even if there may be tuberculous lesions elsewhere. The tuberculous spleen leads inevitably to death unless it is removed in time, while a complete cure is possible after splenectomy if no other organs are involved. He devotes eleven pages to tabulation of the details in twenty-one operative cases, including one from his own experience. The mortality was 25 per cent., but 60 per cent. were cured when last heard from. The findings are tabulated also from twenty-three cadavers with tuberculosis of the spleen. The differential diagnosis is based on the chronic course, the personal and family history, and the enlargement of the spleen with little if any tenderness, but there are about a dozen other diseases that have to be excluded first, from leukemia, hemolytic jaundice, polycythemia, and anemia to malaria, cysts and abscesses. The chief difficulty is in excluding pseudoleukemia and polycythemia. Banti's disease calls for splenectomy likewise. Even at the laparotomy, differentiation may be difficult. Hayden in one case merely curetted and drained, but this is permissible only when total splenectomy is impracticable. Quénu and Baudet in one case found a tuberculous abscess in the lower pole, and they were able to marsupialize it, suturing the spleen to the incision in the parietal peritoneum, so that the abscess could be incised and cleared out, all outside the peritoneum. Recovery was complete in four months. In the advanced necropsy cases, the spleen weighed up to 4 pounds, 3,780 gm., or measured 27 by 19 by 16 cm. in some of the cases.

Norsk Magazin for Lægevidenskaben, Christiania

September, 1918, **79**, No. 9

109 *Insanity in Norway. M. Holmboe.—p. 977.
110 *Intracranial Sympathetic Paralysis. G. Ræder.—p. 999.
111 *Sanatorium North of Arctic Circle. T. Neumann.—p. 1017.
112 Public Health in Norway in 1740. J. Anderssen.—p. 1038.

109. **Insanity and Feeblemindedness in Norway.**—This review of the 1910 census supplements Holmboe's two previous works of the kind on the census of 1890 and of 1900. In 1900 the insane numbered 2.63 per thousand inhabitants, and in 1910, 3.13 per thousand. He advocates compulsory registration of all the insane and feebleminded.

110. **Intracranial Sympathetic Paralysis.**—Ræder's patient had a tumor between the internal carotid artery and the gasserian ganglion. Besides headache, vomiting and pains in the region innervated by the left trigeminal, there had been paresis of the left side of the palate, miosis, ptosis and reduced intra-ocular pressure, but there were no vasomotor or trophic disturbances and no enophthalmos.

111. **Far Northern Sanatorium.**—The Vensmoen institution described is within forty miles of the Arctic Ocean, thirty miles north of the Arctic circle. It is a state sanatorium, with accommodations for fifty-four tuberculous of each sex. Of the total 257 given treatment since it opened two years ago, a favorable result was evident in 72.77 per cent., although nearly 35 per cent. of the patients were in the third stage of tuberculosis. In winter the sun is above the horizon only for one hour and thirty-seven minutes; in summer the sun is below the horizon only for six hours.

Ugeskrift for Læger, Copenhagen

Sept. 12, 1918, **80**, No. 37

113 *Congenital and Inherited Zonular Cataract. K. Lehmann.—p. 1443. Commenced in No. 36, p. 1407.

113. **Inherited Cataract in Danish Family.**—Lehman has been investigating the Volkmann family, tracing the tendency to zonular cataract through four generations. The cataract was bilateral in nearly all those affected. Its occurrence did not indicate that it was inherited as a mendelian dominant, but on the other hand there was nothing positive to disprove this. Epilepsy and idiocy were not unusually common in this family, but the poor eyesight reduces the level of the environment. Of the sixty children or young persons in the various branches of the family, twenty-five had cataract, and four of these had had convulsions and two rachitis. The color of the hair, eyes, the height, chest measure, etc., did not display any special inherited features paralleling the cataract. The best results in treatment were with repeated small discisions. In one, vision is 6/6 although two operations were done at 14 and 16 years of age. The danger of infection is minimal with this small intervention. The patients must be supervised to detect the first onset of glaucoma.

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OBSTETRIC SCIENCE AND ART IN THE SERVICE OF THE NATION *

EDWARD P. DAVIS, A.M., M.D.
Professor of Obstetrics, Jefferson Medical College
PHILADELPHIA

At the present time no medical problem in the United States is without its bearing on the winning of the war and the maintenance of the strength of our population. It is pertinent to ask, What has modern obstetric science and art to give to the nation, and how may it best be given and most efficiently used?

Among the recent advances in obstetrics there are measures which may be rightly called medical and others which are surgical.

MEDICAL ADVANCES IN OBSTETRICS

In the first, agencies to relieve pain during parturition and to prevent suffering and shock are easily of the first importance. The combination of the treatment by suggestion, discipline, morphin and scopolamin, known as the twilight sleep method, has largely collapsed in its gaseous elements, but we have a true knowledge gained by experience of its real value. Those who have used it most intelligently say that when a patient is in a hospital under the constant attention of an experienced physician and good nurses, during the first stage of labor and the early part of the second stage, morphin and scopolamin may be used to advantage. In highly nervous patients it is impossible to tell in advance whether this combination of drugs will excite or soothe the patient; there is some danger of producing asphyxia in the child, labor is prolonged, and the use of forceps rendered more often necessary. This method has elements of value within a narrow scope; we recognize in it a tried and familiar friend in morphin, which practitioners have used during the first stage of labor for many years, with success.

Nitrous oxid and oxygen are strongly recommended and have enthusiastic advocates, but observation and experience show that their use requires skill and experience, that some patients are partially asphyxiated and greatly irritated by these gases, and that they are not suitable for surgical procedures or prolonged anesthesia. They are of especial value for brief manipulations, such as the introduction of bougies or the inducing of labor, the use of dilating bags or the introduction or removal of gauze packing.

But these more recent attempts to mitigate the suffering of parturition have done much good because they have directed the attention of physicians to this point and have resulted in a classification of our knowledge and a comparison of methods. We know that during the first stages of labor, morphin or codein with atropin is exceedingly useful in promoting dilatation with lessened suffering. When nervousness only is the complication, bromids are sometimes of value. During the actual second stage, nitrous oxid and oxygen are used successfully if properly given, and ether is exceedingly valuable when quickly inhaled in small quantities. By such use of ether the mother is rendered unconscious at the moment when the child is born, waking quickly and with no bad results. No woman should pass through labor without intelligent and careful effort to reduce her suffering to the lowest possible degree. In this regard the women in the United States have for years had better attention than is usually given to European women.

Pituitary solution was hailed as a substitute for forceps, the great time saver for the busy practitioner and a great remedy for delay in labor. Its unwise use has caused rupture of the uterus, severe lacerations in the mother and death of the fetus through pressure. It has a distinct and limited field of use. When the mother and child are proportionate in size and the head is low down in the pelvic cavity or on the pelvic floor, the cervix completely dilated and all that is needed is a few uterine contractions, then, and only then, should pituitary solution be given during labor. To cause the empty uterus to contract quickly, thus checking hemorrhage, pituitary solution is especially valuable: it may be used at cesarean section for that purpose or for the immediate stoppage of sudden and threatening bleeding. For hemorrhage it should always be followed by strychnin and ergot, as its effects are brief. In paralysis of the intestine following abdominal section or complicating the puerperal period, pituitary solution is often of value.

The treatment of puerperal septic infection by vaccines and serums is in line with modern advances in the treatment of other diseases. So far there has been no proved ground for the belief that vaccines and serums are of special value in combating puerperal septic infections. Antistreptococcic serum, to be effective, must be prepared for each case and given in doses so large that it may seriously depress the patient; vaccines have yet to prove their reliable effect. What is, however, of decided value and what can do no harm, is sterile horse serum, which in the toxemia of pregnancy and the puerperal state, may be given in doses of 20 c.c., with excellent result. This substance increases the mother's resisting power without producing depression.

The toxemia of pregnancy in its early stage of pernicious nausea and vomiting or in its later form of

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* Read before the Tri-State Medical Association, Madison, Wis., Aug. 20, 1918.

eclampsia, with or without convulsions, *remains* an undiscovered country and an unconquered field for advance in obstetric science. It has been clearly shown that the indiscriminate delivery of eclamptic women by *vaginal or abdominal* section is worse than useless. The emptying of the uterus by no means ends the danger. That form of treatment which secures rapid and thorough elimination with the least shock is best. To be avoided are depressants, as narcotics in large doses. In rare cases prompt delivery by section is indicated. To put the matter more in detail, it is my habit in these cases to bleed, followed by intravenous saline transfusion; to irrigate thoroughly the stomach, leaving within it calomel and soda; to irrigate thoroughly and copiously the intestine, leaving salt solution for absorption; to cleanse the patient's skin and place her between blankets; to use no anesthetic; to give abundance of fresh air and if available, oxygen by inhalation; not to interfere with the uterus unless labor begins, and then if it delays, to empty the uterus in the most prompt and least disturbing manner.

Cesarean section, vaginal or abdominal, is most successful in fulminant toxemia before convulsions begin. When treatment by elimination has failed to improve the patient's condition, prompt delivery may turn the scale.

Convulsions are of minor importance; a woman may die without having a convulsion and another recover who has had a hundred. The prognosis of severe toxemia, whether in early or in late pregnancy, is absolutely uncertain. It resembles strongly the prognosis in pneumonia. In both diseases, death comes from toxemia, and one cannot accurately recognize or *isolate the toxins*.

ADVANCES IN OBSTETRIC SURGERY

Obsetric medicine, then, has gained in its ability to lessen pain and shock, to shorten tedious labor, to prevent sudden hemorrhage and rescue the mother from the dangers of toxemia; but obstetric surgery has shown more decided advances. Contracted pelvis is one of the least dangerous of obstetric complications when the patient is in good hands. A thorough knowledge of obstetrics will prevent postpartum hemorrhage in a great majority of cases. The immediate repair of lacerations of the cervix, anterior and posterior segments of the pelvic floor and perineum gives the patient a complete anatomic recovery from labor. The prompt performance of abdominal cesarean section will save the lives of mother and child in many cases of placenta praevia. Abdominal and pelvic tumors complicating pregnancy and labor are successfully removed; ectopic gestation and rupture of the uterus call for prompt and efficient obstetric surgery. The high application of forceps, prophylactic version in contracted pelvis, craniotomy on the living child, and violent methods of dilation and delivery in prolapse of the cord and shoulder presentation have been abandoned. In no branch of surgery has greater advance been made than in obstetric surgery.

And yet, when a general survey is made of the field of obstetric practice, a very striking fact becomes apparent. Parturition is today to the women of the United States only less dangerous than cancer and tuberculosis, and this extraordinary condition depends on the prevalence of puerperal septic *infection*. Among the civilized nations of the earth, the United States has an unenviable position in the occurrence of puerperal septic infection. Time need not be lost in stating statistics, but these facts are abundantly proved. What is their explanation? Unquestionably the best American obstetrics is the best in the world. In other words, when an American woman has the benefit of the best special practice in obstetrics during pregnancy and labor, she receives more careful, thorough and painstaking care than in any other country. Those who have watched foreign clinics and are familiar with the literature of these clinics have observed this fact.

The worst American obstetrics is probably the worst in the world, and the explanation of this condition lies in the fact that such practice is done by ignorant and often unscrupulous and careless physicians. In Europe the trained midwife is far safer than in this country the bad American doctor. We in America have no use for the midwife and do not desire a perpetuation of her species; we believe that the profession of this country should do its obstetric practice and do it well; but unquestionably a thoroughly trained European midwife is far more efficient and safe than the worst type of American doctor. What suggestion can be made to remedy this state of affairs?

American surgery has reached its present world preeminence through the native skill, ingenuity and originality of the surgeons of the United States. They have been greatly aided by the multiplication of hospitals and by securing from the community in which they are, abundant opportunity for surgical practice and research. Our people have become educated to demand the very highest grade of surgical skill; conditions calling for surgical treatment are well understood by the laity; people are familiar with hospitals and their advantages, and a surgical operation is neither uncommon nor fearful.

If we apply to obstetrics some of the same lines of development, we shall find that the multiplication of maternity hospitals will be of the greatest possible service to our people and to our profession. To these hospitals should be taken primiparous women and all others having complications. If this cannot be done, then the public should demand that the essentials of hospital care be given in the *home of the patient*; in other words, that in her home she *has special obstetric skill*, trained obstetric nursing, *skilled anesthesia*, and whatever apparatus or instruments are necessary for a competent surgical and aseptic management of her case. If the poor can be properly treated in the hospital, if those that are well-to-do can be properly accommodated in hospitals, and if those that are able to demand and afford competent obstetric care can secure it in their homes there will be a definite and great improvement. This will result in the better education of the profession in obstetrics, the better education of the laity, and improved training for nurses as well. The wear and tear of human life may be considerably prevented by such measures. Good roads and motor vehicles and a sufficient number of maternity hospitals will make it possible for the prompt transfer of complicated cases to receive proper attention.

Among the most interesting problems that engage the attention of the modern obstetrician is infection by the *Bacillus coli-communis*, complicating pregnancy and the puerperal state. This frequently manifests itself first in the appendix and with almost equal frequency in the gallbladder. During pregnancy the appendix should be removed as soon as it gives evidence of disease; and the earlier in pregnancy this is done, the better. A gallbladder that is a constant source of suffering and danger should be drained or extirpated as early as possible in pregnancy. The obstetric surgeon is the best man to do this, because experience and observation will help him to detect signs of danger that others may pass unnoticed. A third form of this infection is that which attacks the pelvis of the kidney. Here in pronounced cases incision and drainage of the kidney are followed by the recovery of the patient without the interruption of pregnancy. This subject presents a most interesting and satisfactory field for further study by the obstetrician.

IMPORTANCE OF A CORRECT DIAGNOSIS

When, however, this subject is under discussion, the general practitioner asks where he comes in. He has been told that obstetrics is his specialty; he has long soothed his conscience and the minds of his patients by describing labor as a physiologic process, which therefore requires little or no supervision. This is a half truth more dangerous than a lie; labor is a physiologic process in the physiologic individual, but never in the pathologic person. How many sound, healthy women do we see in practice? How many sound, healthy men are married to these women? There is nothing so perfect as Nature's methods in pregnancy, labor and the puerperal state in a sound woman who is anatomically and physiologically perfect; but of such I have seen very few. There is for the general practitioner one of the most important, interesting and lucrative specialties in medicine. It is that of diagnosis. If people are not very sick and he can find it out, they need very little treatment and will recover. If they are very ill, they frequently require in the surgical way attention that he cannot give; but he is the one who first sees the patient. On his diagnosis may depend the life of the individual. A correct diagnosis promptly made calls for the prompt performance of the operation which is successful; a failure in diagnosis and delay lose the patient's life. Nothing is better appreciated by the laity than diagnostic ability on the part of their physician, and the general practitioner who is skilled in diagnosis becomes the honored and trusted adviser of the family. He may not treat its members for many of their disorders, but his verdict for the necessity of treatment is received without question. In obstetrics, diagnosis is of paramount importance; we are accustomed to tell our senior medical students at the Jefferson Medical College that we hope that a kind Providence will prevent many of them from performing major obstetric operations. But we expect and demand that all of them shall learn obstetric diagnosis, and that they shall learn to know when the head of the child has entered the pelvis and when it remains at or above the pelvic brim. To recognize the normal and equally to recognize the abnormal is no small achievement in any branch of medicine. The man with a large general practice cannot do much obstetric work and do it well without injuring his general medical practice; and many general practitioners do obstetrics to keep the medical practice of the family, a most unwise arrangement for physician and patient. The general practitioner may be tempted to yield to the pleas of his patient to undertake their obstetric care when he realizes that he has neither the time nor ability nor inclination to do the work well.

There will be no essential diminution in the mortality and morbidity of puerperal septic infection until complicated cases of obstetrics are considered as important, as dangerous and as imperative as appendicitis, infection of the gall bladder, or other acute and serious abdominal conditions. Then, and only then, will the general practitioner abstain from fruitless efforts to deliver, and a competent obstetrician will be summoned at the very first sign of danger during labor.

The maternity hospital will afford skilled attention, aseptic care to a large portion of the community, well-to-do and poor; and when our people are educated to the importance of the complicated confinement and the necessity for securing skilled attention for these cases, there will be a decided improvement.

RÔLE OF OBSTETRICS AFTER THE WAR

The present war has drawn attention to the importance of obstetric science and art. The French have gone very thoroughly into the question of what can be done to conserve the French nation. In this country the necessity of prenatal care is being manifested, and the enormous wastage of human life is drawing attention to the necessity for saving. Hitherto the value of a human life has been rated at its wage-earning capacity; hence the sentimental verdict of a jury which, to save the feelings of the parents, awarded damages of 39 cents for the life of a child run over and killed by a car.

When the present conflict of arms ceases there will follow a second struggle no less earnest, no less determined, no less important, no less vital; it will be a struggle among the nations of the earth for supremacy in commerce, manufacture, science and all essentials in the life of a great nation. That people which is strongest and most sound physically, mentally and morally will do best and win most; hence the United States needs a strong and most vigorous population for future developments.

There is another and deeper significance to this question: Death and destruction have been spread abroad throughout the world; many households have been permanently saddened. One recalls the famous utterance of John Bright in the House of Commons, "The Angel of Death is abroad among us, one can almost hear the beating of his wings." Casualty lists will grow longer in these United States, and there will be more gold stars before this war is over.

But the child in the world has always been the symbol of hope. Many a sorrow has been lessened by the love of children since the time when in the temple a Child was placed in the midst of the people. And so the children of our country may well become the silver lining to the present cloud.

250 South Twenty-First Street.

The Victory Over Rabies.—During the year 1916, according to a report recently issued, 1,008 persons from the district of Lyons received the antirabic treatment at the bacteriologic institute in that city. (Rochaix, A.: Le traitment antirabique dans la region Lyonnaise [1916], *Jour. de physiol.*, 1918, **17**, 692.) A single death in this list places the mortality at 0.099 per cent. Since 1900 more than 9,000 persons have received antirabic inoculations at Lyons alone, with a total of nine deaths, or 0.09 per cent. The story has become an old one; but it will long bear repetition as an eloquent testimony of the blessing of intelligent scientific research.

OTOLARYNGOLOGY IN THE FIRST YEAR OF THE WAR

AN INFORMAL REPORT *

HARRIS P. MOSHER, M.D. (Boston)
Lieutenant-Colonel, M. C., N. A.
WASHINGTON, D. C.

The subjects dealt with in this informal paper are: the medical problems of the base hospitals at the cantonments, and some gossip about the personnel at these hospitals; the present and future needs of otolaryngology as to personnel and finally a few comments on the character of the medical work in the Army, stating why I believe it a grown man's work and not, as it has been dubbed by a few of the present stay-at-homes, work to be done by boys.

My duty up to the present time has been largely in recruiting medical officers for otolaryngology. This naturally has aroused deep feeling, and the closing paragraphs, I am conscious, are at least reminiscent of this feeling.

THE MEDICAL PROBLEMS OF THE CANTONMENTS

The cantonments, as is well known, are small cities with a population of from 20,000 to 40,000. Although they were built in a few months, they have all the appointments of cities of years of growth, from churches to jails, and from libraries and theaters to fire engine houses. They are cities of youth; poverty and old age are never seen. Except for the nursing staff, women play but a minor part in them. In the normal cycle of a man's life, death alone is present.

At these cantonments there are sixteen base hospitals for the National Army and fifteen for the National Guard. Besides these there are scattered over the country general hospitals, post hospitals and special hospitals. One of the special hospitals is being fitted out as a hospital for head surgery. Reconstruction hospitals and hospitals for reeducation are soon to come. The number of beds in the cantonment base hospitals carries between 1,000 and 2,000, the beds in the general and post hospitals from 150 to 500. One special hospital for tuberculosis has 1,000 beds, and the hospital for head surgery has a maximum capacity of 500. Up to the present time the total number of beds planned for in this country is more than 70,000. I am not at liberty to give even approximate figures, such as the ones just given, for the hospitals contemplated and actually built abroad, but the American public can rest assured that there will be an adequate number.

The death rate is of course low, for the soldier citizens of these cantonments were chosen as physically fit before they took up residence there. The sick rate also should be low, and is low; but a curious fact, well known to all experienced medical men in the Army, soon became evident—namely, that the assembling of these apparently well young men was at once followed by epidemics of disease. The infectious diseases of childhood at once appeared and took a very virulent course. Pneumonia, the friend of the old, became the deadly enemy of youth. Cerebrospinal meningitis, which is relatively rare in civil life, became almost common.

An apparently well man is often a carrier of bacteria which he gives to his fellows. Men who have long lived together, however, seem to acquire an immunity to each other's bacteria; but take men who are strangers and assemble them in large numbers, as they are today assembled in the cantonments, and infectious diseases at once appear in spite of the healthy mode of life. Infections borne by food and drink—for example, typhoid fever, have been practically stamped out. Breath-borne infections, the bacteria of which live in some part of the respiratory tract, preferably the nose and throat, are yet to be conquered.

There are no vaccines for most of these diseases. The fundamental point in dealing with them, therefore, is to prevent them by avoiding overcrowding and by providing adequate ventilation. Recurring epidemics of cerebrospinal meningitis which took place last year at the barracks of one of the most celebrated regiments in England were controlled by such measures. The sleeping huts, which previously contained thirty beds, had ten beds taken out so that the minimum distance between the beds was 2½ feet. In addition, half of the windows of each hut were opened at the top on a slant and nailed in this position and untouched regardless of the weather.

As the men come to the camps well, the problem is to find at once the soldiers who are carriers of disease and isolate them before they can infect their mates. This was accomplished in a dramatic fashion at one cantonment recently by having twenty-four teams of medical men meet the incoming troop trains and take cultures from the nose and throat of each recruit. Those who were found to be carriers were at once isolated and treated. Work of this kind means that the bacteriologists in this war are an overworked set of men.

The problem of the carrier is the acute medical problem of the cantonments. It is becoming evident that the nose and throat are the abode of choice of the streptococcus and probably of the organisms responsible for many of the infectious diseases. The prophylaxis of infections of the respiratory organs is a most pressing problem in this country and abroad. Striking results in the control of infectious diseases have been obtained in at least one cantonment by the use of gauze masks, and in measles the use of the gauze mask has been made compulsory. Only the surface of this problem has been scratched. Never before has such an opportunity been offered to solve it. If it can be solved it will be one of the great medical achievements of the war. The poisonous gas of the enemy can be seen. We take the elaborate masks which are used by the soldiers to protect themselves as a matter of course. The germ-laden breath of the soldier cannot be seen, but it is even more deadly than the gas. It would cause a smile if every soldier on a transport was required to wear a gauze mask when below or between decks, or if a less novel measure was ordered, namely, that every soldier should carry a piece of gauze and be required to cough into it. Had either of these measures been a routine procedure on the transports last winter, my feeling is that instead of the men landing in France ill with acute or chronic pharyngitis, acute or chronic tonsillitis or acute or subacute bronchitis, which was the condition of things all through last winter, the percentage of such diseases would have been markedly reduced. I feel strongly on this point, and I am certain that I am not making a mountain out of a mole hill.

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* Read before the Section on Laryngology, Otology and Rhinology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

In addition to the problem of the carrier at the base hospitals, there have come up for solution the control and prevention of venereal disease, the treatment of infectious diseases and of diseases of the respiratory tract, and the treatment of the surgical complications of these diseases, such as tonsillitis, mastoiditis and empyema. The otolaryngologist, the general medical men, and the bacteriologists have been by far the busiest medical officers. Waves of infection have passed over some of the cantonments, and the streptococcus has had a field day.

OPERATIONS PERFORMED IN EAR, NOSE, AND THROAT DEPARTMENT, HEAD SECTION, SURGICAL DIVISION, BASE HOSPITAL, CAMP SHERMAN, OHIO, IN APRIL, 1918

Name of Operation	Disease or Injury	Number of Cases*	Anesthetic					
			Cocain	C. M. P.	Ether	Procain	Chloroform	None
Incision of external canal	External otitis......	1	..	1				
Scarification of edematous epiglotis	Acute edema of larynx	1	1					
Removal of sphenoid anterior wall	Sphenoiditis.........	1	1					
Enlargement of mastoid wound	Secondary operation, mastoiditis	4	..	..	2	1	..	1
Removal of polypi......	Nasal polypi........	3	3					
"	Otitis media, acute..	48	3	29	..	..	..	16
	Granulations.......	2	1	1				
Simple mastoidectomy.	Mastoiditis (acute, *purulent*)	13	..	..	7	3	3	
Radical mastoidectomy	Mastoiditis (chronic, *purulent*)	4	..	..	4			
Brain abscess...........	Brain abscess, temporosphenoidal	1	..	..	1			
Removal of distal portion of uvula	Elongated uvula....	1	..	..	..	..	..	1
Tonsillectomy and adenoidectomy	Hypertrophied tonsils; adenoids	81	81					
Opening abscess, nose, left and right	Abscess of nose.....	1	..	..	..	..	..	1
Permanent opening, maxillary antrum (nasal)	Chronic empyema...	5	5					
Antrum puncture and washing	Acute sinusitis......	25	25					
Opening ethmoid cells..	Chronic empyema...	2	2					
Removal of septal spur	Septal spur..........	1	1					
Secondary mastoid.....	Dissecting temporal abscess	2	2					
Incision and drainage..	Peritonsillar abscess	46	13	..	..	..	..	23
	Abscess of neck.....	3	..	..	2	..	1	
	Furunculosis, ear...	1	..	..	..	..	..	1
Partial removal of turbinate	Hypertrophied middle turbinate, left, and pur. inf. sphenoid, left	1	1					
	Hyp. inferior turb.	1	1					
Total.............	....	248	140	31	16	4	4	53

* No operation has been other than successful.

Only supposedly well men are chosen for the Army because its sole purpose is to fight. The chief purpose of the Medical Corps, therefore, is to keep the soldier well. Unfortunately, it is not its sole purpose because well men get sick, and fighting men must be injured. Naturally, the most dramatic part of the medical officer's work in the Army is caring for the wounded, the most important part, however, is keeping the fighting men well. Preventive medicine, therefore, is the medical problem of the Army *par excellence*. Those who have the vision to engage in the solution of its problems have under their control in the Army an unparalleled human laboratory and the opportunity of a century. I feel that medical men do not as yet realize this.

If practice makes perfect, the otolaryngologists in the Army today should be experts in opening peritonsillar abscesses, in resecting the septum, in tonsillectomy and in mastoidectomy. They can never hope, however, to catch up with the number of tonsils that are acting as foci of infection and thermostats for streptococci. The dentists can never hope to clean up all the teeth that are foci of infection, and the surgeons, operating as they do in some of the cantonments in from ten to twenty cases of hernia a day, can never see the end of their task. It is my belief that the soldiers who are to compose the standing army which is to maintain peace when it finally comes will never take their place in the ranks unless they have normal noses and throats, or have them made normal by operation.

The total number of treatments given in the head house of the base hospital at Camp Sherman, Chillicothe, Ohio, during the month of April, 1918, was 6,174. Of these, 1,755 were given in the eye section and 4,419 in the ear, nose and throat department. The report of the operations in the ear, nose and throat department of the head section is given in the accompanying table. Attention is called to the number of tonsillectomies and peritonsillar abscesses.

I am much concerned at present about the scientific results of this war in the medical line. Naturally, of course, I am interested first and chiefly in my own. My efforts must be largely confined to reminding the men in the hospitals that a great opportunity lies at their hand, and urging them to grasp it. In a great measure it is a matter of keeping adequate records. One hesitates to add more paper work than is already necessary in the Army. The initiative in this matter lies with the commanding officers of the base hospitals and the chiefs of the medical divisions. By means of the Army records, men can be traced for years to come. What better chance on a large scale has the medical profession ever had of settling the results of certain operative procedures—for example, tonsillectomy in chronic affections of the heart or of the joints—than is before it now? Practically every medical man serving in the Army wants to go abroad. I have been in France twice, but I can assure you that it is a great question in my mind whether there is not a fuller scientific opportunity in this country.

THE EQUIPMENT AT CANTONMENT BASE HOSPITALS: PERSONAL NOTES

The equipment at the cantonment hospitals is nearing completion. At the beginning of the war it was found that 80 per cent. of the surgical instruments were of German make. The instrument firms of this country were at once lined up and asked for maximum output. For a time the men who were first at the hospitals had but little to work with except the instruments which they brought with them or had sent from their offices. Now it is only a question of asking for reasonable things and knowing how to ask for them and to have a vigorous commanding officer back up the request and repeat it if necessary, in order to get all essential instruments. Naturally the whim of every operator for special instruments cannot be granted. It is still good policy, however, to carry one's pet instruments. Then one operates at ease from the start. If the instruments wear out, this can be called part of one's contribution to the cause in place of buying more Liberty Bonds.

Speaking of being first on the ground reminds me that in the beginning days some of the men did not see why they were required to be on the ground so early, why they were not left at home until things were further along. They were sent because their experience was needed to start things properly. In banks, clerks are not made directors. Of course in many cases the men first on the ground were uncomfortable. In the beginning some murmured a bit; now they brag of it. I have yet to talk with one of the pioneers who would have missed these beginning days. In many cases they made the hospital what it is at present even, like Day, taking part in the carpenter work. Where the men realized their job they saw to it that the head building was not pushed off the map, that it was not used for extra barracks, that it was well placed, that the original plan was even improved on. Take Holmes, for instance; he was put in charge of all the building by the commanding officer, and the result is no surprise to those that know him. The rest of the hospital had steam for its operating room. As a matter of course, Holmes soon had it for his building. He got not only steam but everything else that the Army allowed, and I suspect some things that were not allowed. In fact, he has one of the show places among the cantonment hospitals. He is an early bird if there ever was one, and always collects a large basket of worms wherever he goes. Pierce is happy at Grant now that he can keep his shoes and his clothes clean. Eagleton, at Dix, is still in a delirium of enthusiasm. Knowles has a fine place at Devens, and Skillern has developed a taste for administrative work and has aspirations to become a commanding officer. He also is much interested in his band. He has promised to embarrass me by meeting me with it when I next go there. Harris has gone to Oglethorpe to take charge of the teaching of otolaryngology. His worries have begun and mine have finished. Berens, Greene, Emerson and Fetterolf are just coming into the service. Wherever they go, the Surgeon-General's Office knows that things will run right. Levy got as far away as he could and is at Camp Lewis, American Lake, Washington. Wherever men of this stamp are placed there will be no more rumors of substandard work like Wild's incision for mastoiditis, and no suspicion of overoperating.

Haskins went early to West Point and is now professor of military hygiene. Friedberg is at Doniphan, and one of the men working under him says that being in the clinic there is better than any postgraduate course abroad.

During the year and since the entrance of this country into the war, Ingals has died. He took great pride in acting for the Surgeon-General's Office as state adviser, looking up the standing of applicants and furnishing the division of otolaryngology with their rating.

His figure comes back to me now as he stood last year by the dinner table after the banquet of the American Laryngological Society. He spoke about the war and said quietly but firmly, as was his custom, how he regretted that he could not take a more active part. He did his part, however, to the limit of his strength after the habit of his life. He suffered greatly, but lack of patriotism in a friend or acquaintance hurt him more than the pain of one of the cruelest diseases.

THE PROBLEMS OF THE SURGEON-GENERAL'S OFFICE

Naturally there have been many worrying problems for the Surgeon-General's Office to pass on. Of these, otolaryngology has had its share with the other departments. The first was the problem of consultants. Three or four consultants were appointed, but the plan from the start worked poorly and the medical officers who held such positions had to be given the choice of taking full time duty or going on the inactive list. Part time service is considered by the man who is giving full time as an unjust discrimination against him. He holds that all men have an equal right to it, and they have. Not only does it carry an unjust discrimination, but it destroys military uniformity and control. These, of course, are simply other names for discipline, and discipline is the backbone of the military machine.

The commanding office of an army hospital naturally has pride in having a staff of medical men who can cope with all the cases that come to his hospital, however difficult. If he is not so fortunate in his personnel or if unusual cases occur, he is at liberty to call in the most available civilian physicians. This has been necessary in at least one hospital and may be necessary again, unless more of the experienced otolaryngolgists of the country enter the service. There will be, of course, some men who cannot enter the service on account of physical disability, age, or some other sufficient and good reason. Let these men, if they want to be of use, make themselves known as standing ready to help as civilians; but they should be careful not to embarrass the government by trying to be both in uniform and out of it.

Service as contract surgeon has not been used in otolaryngology, although he has been employed in some of the other departments. Pressure is being continually brought to have the government use the civilian hospitals as a part of the war machinery. If I should give my own opinion in this matter, it would be that if the war is to continue three or four years more I can see how this may become necessary. At present, however, it brings up the old question of divided control and part time service. The Surgeon-General's Office, therefore, does not favor it.

The problem of the medical student has met a happier solution. Procuring a medical education is considered by Washington as preparation for the Medical Corps of the Army, and the medical student graduates by law into that corps. Those who are serving internships in hospitals have been allowed a year for such services. Naturally, however, many of the more ambitious and the most patriotic among our young men prefer to enter the Army at once and let the Army experience take the place of the internship.

As I look at it, it is axiomatic in a war of the magnitude of the present one that our hospitals are to be short handed, and that the medical schools must run on reduced personnel. Elaboration of courses must be eliminated for the time being and the schools come down to the three R's of medicine. Both hospitals and medical schools, however, can help themselves by doing away with the age limit and bringing back into service the men who have been retired. There is at present a committee in the Surgeon-General's Office which has this most important matter of teaching in the medical schools in charge for adjustment. There is every disposition to look on both sides of the question—England's mistake is well known. The Surgeon-General's Office has been fully reminded of it.

THE NEED FOR MEDICAL OFFICERS

I am continually asked if there is still need for medical men in the service. Sixteen thousand are now serving, but an imperative call has gone out for 5,000 more. In the general branches of the medical service, physicians of large hospital experience are badly needed. From all the cantonments the cry comes, Send us experienced men. Otolaryngology is better off than general medicine and surgery. However, when the base hospitals begin to go overseas in numbers there will not be enough experienced otolaryngologists to take their places. To make the department of otolaryngology what it ought to be, there should be on file, ready for instant use, the names of 200 otolaryngologists of ripe hospital experience. These men should be ready to take their physical examinations and send in their application papers on telegraphic notice. At present the available list is less than fifty. As things stand now, if your name was on such a list you might be used in six weeks or six months. However, by standing ready to apply for a commission, you have put yourself at the disposal of the government and have fulfilled your duty, at least as I see it.

If you take the combined membership of the American Otological Society, the American Laryngological Society, and the American Laryngological, Rhinological and Otological Association and omit the duplicate names and compute the percentage of the members who are in the service, it is found to be about 22 per cent. There are five lieutenant-colonels—Kopetsky and Imperatori in the field ambulance, Haskin, professor of military hygiene at West Point, and Richardson and Mosher in the Surgeon-General's Office. There are forty-one majors, twenty-six captains and eight lieutenants. The records also show that there are in active service 210 otolaryngologists and 232 ophthalmologists. Unfortunately, I do not have the figures for the special sections of the American Medical Association. Owing to the large size of these sections, I should imagine that the percentage would be somewhat less.

RETENTION IN A SPECIALTY

At the beginning of the war, the Surgeon-General, with his large grasp of affairs, made the statement that specialists would be used in their specialty as far as the exigencies of the military service permitted. No absolute promise could be made, and none was made. Naturally some men have tried to kill the goose that laid the golden egg by considering this statement a promise. This attitude has been especially true of the men just entering the specialty. No military organization could stand for a minute if so constructed. Full command is essential in order to meet changed conditions and emergencies. Up to lately the great majority of the specialists who came into the service have been used in their specialty. A few that have been found incompetent have been transferred to other lines of the medical service. I am aware also that a few men have escaped retention in their specialty, and these failures, I am also aware, will be talked about and made the most of to the end of the chapter. The fact remains, however, that never before in any war have the medical officers been assigned in accordance with their special training as they have in this war; and this is all due to the recognition of modern medicine by the present Surgeon-General.

Within the last month the shortage of medical officers has become so acute, the needs of the field service, without which the Army from the medical standpoint could not exist a day, have become so pressing that many of the medical men within the draft age, specially trained or not, have been released to field service. This, of course, is essentially a young man's job and one that appeals to the right kind of young men. This emergency has made it difficult now to retain in his specialty any man under 40. How long this shortage of men in the field service will last depends in a great measure on how the medical men of the country respond to the recent appeal. It was this scarcity of medical men that made the last call of the Council of National Defense necessary. War has always been an affair of young men, inconceivably sad, of course, but, in a just cause, most glorious. This war, from a medical standpoint, has been an affair of older men.

It goes without saying that not all physicians are equally well trained; that not all have had the same hospital advantages. As not all the physicians entered the service at the start and at the same time, it follows that those who came in first will rank, for a time at least, those who came in last. It cannot be made fair any other way. The men who gave up a year ago—and what they gave up in many cases was all that they had—are not to be lightly pushed aside by those who took a year to arrange, bargain and decide. There is no game in civil life in which such a thing would be called fair. Why should it be asked for in entering the Medical Corps of the Army?

There are not enough men of operating experience to make the medical service in otolaryngology what it should be. Some of the best men I know are not in the service—best in one sense. These men are beginning to come in. In the year that has elapsed they have been able to keep their homes open and be with their families; yet in spite of having delayed, and in spite of having enjoyed these advantages, some of them ask on entering the service that they supplant the men already in the field. Not even a German would call this fair.

I am often asked where the young medical men are, what the matter is with them that there are not enough to do the commonplace work that makes up so large a part of the army medical officer's day. If they were all the sons of physicians I should say that they took after some of their fathers.

THE CHARACTER OF THE MEDICAL WORK

The opinion is often expressed that the highly trained physician is wasting his time in the Army, that he would be doing more good staying at home attending to the civilian population. At times this view expresses an honest conviction; occasionally, alas, it is used to drug an awakening sense of duty. As I see it, there is an abundance of worthy opportunity for the man able to grasp it.

It is true, of course, that commonplace work predominates; that there is plenty of boy's work, as some have called it; that for the moment at certain places there is plenty of no work at all—to use a Hibernianism—plenty of just staying on the job waiting and prepared, which, by the way, is a new thing for us. It is true, to repeat, that there are plenty of all these nonpicturesque and nonstimulating things; yet those who are making up their decision to serve or not, if they let the question rest here, miss the most vital point of all. In the last analysis, no one enters the service to do special medical work, to increase one's scientific reputation or to gain one. The basic idea is to help win this war in the shortest possible time, or, as the boys say, "to lick the Germans;" and nothing which contributes to this end, however tedious and commonplace it may be, is beneath my dignity or, saving your grace, beneath yours.

It must be admitted that it is hard at times to hold true to this glorified view of the work, especially when one sees the inequality of sacrifice made by men even in the service, and when one learns that some of them are smugly adding to their substance even in war time and one knows that his own is lessening; but hold true to it one must. It is your guiding star in this lonely job of measuring up to your duty in your allotted place. If you think differently and stay out of the service when you should serve, you must be prepared some day to tell your daughter—it will not be necessary to tell her mother, for she will have it buried in her heart—that her girl chum's father, not her own father, kept the faith. It has made me heartsick and weary beyond words to sit at my desk in the Surgeon-General's Office and read and hear this and the other threadbare excuse which medical men give for not joining the Army Medical Corps. As I look at it after a year of trying to do my bit, those who make these excuses have lost their American heritage of red blood.

ABSTRACT OF DISCUSSION

Major Charles W. Richardson, Washington, D. C.: I would like to have heard from some civilian doctor on this subject. It is a half-stated subject when it is stated from the military side only. I played the game from the beginning. First, as chairman of the subsection of otolaryngology in the Council of National Defense, then as chief of the otolaryngologic section, division of surgery of the head, Surgeon-General's Office, during the absence of Lieutenant-Colonel Mosher on temporary duty in France, through legislative work, and later in the organization of the section of defects of hearing and speech in the division of physical reconstruction. As to the assignment of service: It is Colonel Mosher's desire to keep all the men in otolaryngology accepted for that service. It is to his interest to do so, and he feels obligated to do it for you; but that will be prevalent largely in the case of men over 40. But there are times, as you know, when the general service is pressed—I mean the field service. They have had two or three such pressures and they have had to take the younger men and put them in the field service. In going over the cards in the personnel division last winter, when I was in the division of surgery of the head, I found six men prominent in otolaryngology who were in field service. I took the liberty of writing them a personal letter, not from the office, but from my home, and asking if they would like to go back into otolaryngology and be assigned there. I was very much surprised to receive a letter from each and every one of them telling me that they were delighted with their regimental service; that they were learning more there than they thought they would ever be able to learn in medicine, and they were more than willing to stay where they were. That was interesting to me. So, remember one thing, that the exemptions for you in otolaryngology will be maintained if it is possible to do it. For younger men, under 35, the exemption cannot be made, because these men are the men who have not gotten so far into laryngology; they have not gotten so far away from general medicine or general surgery, and they can be spared for field service. Always remember that when you put in your application for service you have Colonel Mosher as your guardian in the office, and he will take care of you.

Capt. Robert H. Fowler, New York: At Camp Mills last summer we were "first on the ground" in more senses than one, for the officers slept in open tents that had no floors. One week after we arrived, the pegs were placed, the poles up, and we had a hospital going with 400 men under tentage. The "head specialists," including the eye surgeons, were given one small room, and, with the whole Rainbow Division in an open camp to look after, we soon found that there were more cases of nose, throat and ear trouble than we could handle. Chronic conditions had to be excluded, and those patients were given preference where treatment or operation promised to send soldiers quickly back into the line. Every tenth patient who reaches the hospital is referred to our section for treatment, and often there is need for ear and throat operations which, from the Army standpoint, are very much worth while; and which gain us the respect of the Regular Army officer in that they add strength to the fighting unit.

The chance to help an individual soldier "carry on" is frequently seen, and, in addition, it sometimes happens that there is opportunity to expedite matters for a whole unit in a pinch. At the Garden City Aviation Concentration Camp, in November, an epidemic of diphtheria threatened, as one or two cases had occurred. By making 300 cultures, and thus finding and isolating six "carriers," it was made possible for three squadrons to be moved to a distant assignment on schedule.

During the first two months of my assignment at the base hospital, Camp Shelby, in charge of the ear department, more than 100 cases of acute purulent mastoids were operated; thirty similar operations had been done during the two weeks preceding my arrival. This large number of acute mastoid infections in one camp during a space of three months was the more surprising in that there had been at the two other camps, where I had been stationed, during the preceding five months, only half a dozen cases altogether. The fact is that at Camp Shelby there was a streptococcus epidemic, following a measles epidemic, which had a specific tendency to attack such tissues as the mastoid cells. It has been suggested in one of the papers on "Contagion in Military Camps" that when an epidemic has assumed large proportions, the virulence of the organism becomes greater. Perhaps it is on this account that we found it imperative to act with the greatest promptness in these cases, since complicating mastoiditis followed more rapidly during this epidemic than in the sporadic type of mastoiditis seen ordinarily in civil life. Under the circumstances, we arranged to have the otitis cases reported early from the field hospitals and regimental infirmaries. Incision of the drum done promptly arrested the progress of a certain number of these cases, but in a surprisingly large proportion it was necessary to operate on the mastoid, and it is gratifying that nine out of ten of the soldiers who had the mastoid operation performed on them during the winter months at Camp Shelby, are already doing full duty. One point came out quite clearly, and my conviction on this is very firm, that the best results are obtained by immediate operation when there is evidence of acute purulent mastoiditis. Early operation is safe; danger lies in delay.

Dr. H. W. Loeb, St. Louis: This war has made a new era in surgery, in war surgery, especially in this country, so far as it has established the validity of ophthalmology, otology and rhinology as essential elements of the organization. Last year we left this to a committee, and this committee has done its work, with the help of the ophthalmologic committee; but I think it should be known that it is through the agency of Colonel Lyster, Colonel Parker, Colonel Mosher, Colonel Richardson, Colonel Black, Colonel de Schweinitz, Colonel Bordley, Colonel Greenwood and also Colonel Wood that this plan contemplated a year ago has been established, and I do not believe that the time will ever come again when the United States Army Medical Service will be carried on without these great and important specialties being given their proper place.

Capt. John B. Potts, Omaha: I had the pleasure of being associated with Captain Fowler for two months in Camp Shelby during the epidemic of mastoiditis which occurred at that time. When I went there—Captain Fowler preceded me by a month—I questioned whether it was necessary to do as many mastoid operations as were being done. Captain Fowler showed me his cases and we went over the histories. Previous to Captain Fowler's arrival they had attempted to wait two or three weeks for the ordinary mastoid to break down, or to decide whether it was absolutely necessary to operate, and their results had not been satisfactory. The percentage of cases that did badly was large—larger than it should have been; much larger than in civilian practice; larger than I have seen in epidemics. Captain Fowler was convinced that he was dealing with an epidemic different from anything he had encountered before, and which required more radical measures in the sense that he would have to operate sooner—less radical in the sense that he would get drainage sooner. The result was very striking. From the time he began operations early the basilar meningitis and other complications practically stopped. He did not operate in every case. He had recourse to the roentgen ray, blood count, bacterial count and consultation with an internist, surrounding himself with every safeguard before operating. In the fulminating cases, operation was performed at once. I think the early operation saved many lives. It was simple, because many of these cases followed pneumonia and some measles. Complications occurred less often. One patient developed an endocarditis as a complication after the operation. The mastoid healed nicely, and there were no complications, but about three weeks after the operation, when the mastoid wound was apparently healed, the temperature rose again, because of an acute endocarditis. This quieted down and the man's temperature was normal for two days, and we thought he was going to get well; then his temperature rose again, but it was of an entirely different character, showing that he was developing a meningitis, which caused his death. The necropsy gave evidence of extension from the mastoid. I believe the meningitis was secondary to the endocarditis. In a case of scarlet fever we delayed operation until about the seventh or eighth day. The mastoid complications appeared several days before the temperature from the scarlet fever dropped. A paracentesis was done immediately so that we had drainage. About the second or third day after the paracentesis his temperature began to rise again, as high as 102 and 103 F. He was a very sick man; he had a great amount of pain. When the mastoid was opened the bone was almost black and very necrotic. On the second day after his operation his symptoms cleared up and he made an uneventful recovery. With such a rapid destruction of the mastoid it seems to me we were taking a great chance waiting as long as we did.

POLLAKIURIA AS A FUNCTIONAL DISTURBANCE DUE TO EYESTRAIN

CAUSES OF EXCESSIVE FREQUENCY OF MICTURATION *

W. W. KAHN, M.D.
DETROIT

It is a remarkable fact that in such a well systematized science as medicine, so perfectly obvious a fact as micturition has escaped a clear-cut definition of its various phenomena. The looseness of the terminology has engendered looseness of diagnosis and therapy. We are, therefore, daily encountering essays in our medical literature dealing with incontinence of urine which mean principally excessive frequency of urination. I was as much a sinner as the rest, as may be seen by one of my previous articles,[1] in which I reported sixty-four cases of pollakiuria under the false title of polyuria.

DEFINING THE SUBJECT

The trouble lies in choosing one term to describe two widely different phenomena. In a medical dictionary[2] we find, for instance, anuria defined as (1) retention of urine and (2) suppression of urine. The first means mechanical retention of urine in the bladder or pelvis of the kidney, while the second means a suppression of excretion of urine. These phenomena are entirely different in causation, prognosis and treatment.

Oliguria is defined as an abnormally diminished discharge or secretion of urine — two widely different pathologic entities.

Incontinence of urine is defined as unconscious, involuntary dribbling of the urine, due to paralysis or inactivity of the sphincter vesicae or due to an overdistention of the bladder (incontinentia urinae paradoxa). This is a very good definition; however, many medical writers do not keep strictly to the meaning of the term, but include in their themes two other maladies, namely, the excessive frequency of micturition, or pollakiuria, and enuresis.

Enuresis has also two meanings, according to Foster's definitions: it may mean involuntary micturition, either diurnal or nocturnal, or it may mean incontinence of urine from all kinds of causes.

In order to bring clarity to my mind as to the symptomatology of micturition in relation to its frequency, but not the amount of urine, I classified it thus:

1. Anuria, absolute suppression of micturition.
2. Oliguria, abnormally diminished frequency of micturition.
3. Orthuria, normal frequency of urination.
4. Pollakiuria, excessive frequency of micturition.
5. Enuresis, diurnal or nocturnal involuntary discharge of urine.
6. Incontinentia urinae, constant and involuntary dribbling of the urine.

FREQUENCY OF MICTURITION

The only difficulty in this classification was to decide on the normal frequency of micturition. To find this norm of frequency I searched the textbooks on physiology in vain. I placed it, after numerous consultations with able general practitioners and urologists, at from three to five evacuations of the bladder during the waking hours. Any necessity of breaking one's sleep to void urine is pathologic, except when an abnormal amount of fluid has been taken before retiring. With from three to five evacuations of the bladder during the day as a norm, one evacuation a day would come under the head of oliguria, and six or more evacuations during the day, or those that wake a person from sleep to urinate, would come under the head of pollakiuria.

That the subject of disorders of micturition is very vital is proved by the great number of articles that have lately appeared in our medical journals.

One excellent article, written by Dr. H. G. Bugbee,[3] has a nearly correct title, namely, "Frequency of Urination in Women." What he meant was excessive frequency of urination in women. In this essay he has gathered statistically the causes of too frequent micturition in a thousand women and girls, and finds that increased frequency is one of the most common disorders of urination; in his tabulated findings he comes to the conclusion that all except thirty-four cases show some local lesion, not only in the bladder, but anywhere in the urinary tract. The thirty-four cases not showing any pathologic change whatsoever, he classifies under the head of neurosis.

NEUROSIS AND MICTURITION

In spite of the small number of neurotic cases found, Bugbee seems to feel the "stigma" of not having any pathologic lesions in these thirty-four patients, and the

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* Read before the Section on Ophthalmology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

[1] Kahn, W. W.: The Systemic Diseases Caused by Eyestrain, Detroit Med. Jour., 1916, **16**, 98.

[2] Foster, F. D.: Encyclopaedic Medical Dictionary.

[3] Bugbee, H. G.: Frequency of Urination in Women, THE JOURNAL A. M. A., March 3, 1917, p. 693.

following physicians who discussed his paper seemed to agree with him fully.

John R. Caulk of St. Louis[3] declares:

> This class of cases, seen frequently in young women who have been stamped as neurasthenics and hysterics, we must be careful about. Urologists who use the cystoscope do not make such mistakes very often, but it is the commonest mistake for the general practitioner to make. These patients almost always have gone for years as neurasthenics. I recognize that there is a neurotic bladder, but we have to be very careful in eliminating every factor before diagnosing a neurotic bladder, because so many of these cases are due to pathologic conditions at the vesical neck.

Theodore Baker of Pittsburgh[3] also was very suspicious about these thirty-four cases. He warns:

> We should look with extreme suspicion on the diagnosis of a neurosis; because we cannot find any pathologic lesion, I think we should be very careful about calling it a pure neurosis. I want to call attention to syphilis as a cause of urinary disturbance.

James A. Gardner of Buffalo[3] also coincides with Baker as to the probability of Bugbee's having overlooked organic lesions in the so-called neurosis cases. He says:

> Most of those cases are called neuroses because we are faulty in our diagnosis; we are not able to find out just where the trouble lies.

A. B. Cecil of Los Angeles[3] came the nearest to truth when he said:

> It is the so-called neuroses in which we are interested. The gross causes of frequency of urination we all recognize; but when we speak of "frequency" in women it brings to the urologist's mind that type of case in which we are absolutely unable to find anything the matter with the patient. We do not see this type of cases among men. It would seem that, perhaps, there may be in women a hypersensibility, where even normal urine under slight pressure will produce the desire to urinate.

If we take into consideration the limitations of our present medical knowledge and the inaccessibility of many lesions to our senses, it stands to reason that the thirty-four patients out of a thousand, in whom Dr. Bugbee failed to find any local lesions, probably had these, but they were not demonstrable by our present methods of diagnosis.

If, however, Bugbee and the others are right, as they evidently are, in demonstrating pathologic changes in the urinary organs of all cases of pollakiuria, is there any room or need for a neurosis theory, and if so, what lessons in practical therapy can be derive from it?

Foster[4] says:

> It is a matter of common experience that we feel the desire to make water sometimes when a large quantity and sometimes when a small quantity of urine has accumulated in the bladder. We have evidence that the bladder possesses to a very high degree that obscure continuous contraction which we speak of as "tone"; and, further, that the amount of its tone is exceedingly variable, the organ, quite independently of distinct efforts at micturition, being at one time contracted and at another flaccid and distended. When it is in a contracted state, a small quantity of fluid may exert the same effect on the vesical walls as a larger quantity when the bladder is flaccid. Hence, while the determining cause of the desire to make water is the pressure of the urine upon the vesical walls, the quantity needed to produce the necessary fulness is dependent on the amount of tonic contraction of the muscular fibers existing at the time. And we have evidence that this tone is regulated by the nervous system.

The truth of this statement was brought home to me accidentally by a case I first saw July 2, 1915.

REPORT OF CASE

Mrs. J. K., aged 28, the wife of a working man, was a neurotic patient, if ever there was one. On account of her many ailments, she was unable to do her housework and had to go back to her parents. She complained of headache and a sensation of pressure over her eyebrows and of pain in her eyes. She vomited when the headache was severe. She also suffered from photophobia and asthenopia for near and distance. Her appetite was variable and her digestion poor. She was constipated and exceedingly nervous. Almost daily she was given to prolonged spells of crying and screaming, especially when somewhat irritated. Her sleep was exceedingly poor, disturbed by terrifying dreams, recurring regularly when she tried to doze off in the morning. She felt more or less constant pain in the legs and in both inguinal regions. Her hands and feet were always cold, with frequent tremors and numbness of the hands, which also felt excessively dry. Her menses were never regular; menstruations recurred about every two months and were scanty and painful. Riding on a street car made her feel sick and miserable. At the time of her visit she weighed only 93 pounds.

The status of her nervous system can be guessed from the fact that when asked to step into the next room so that I might learn how far she could see, she fell on her mother's neck, tearfully kissing her, and kept crying, "Goodbye, mother! Goodbye, mother!"

Her vision was fairly good (20/20). As a refraction under a mild cycloplegic of homatropin and cocain was unsuccessful, I ordered the instillation of atropin. For reasons of refraction, the use of atropin was kept up three weeks. The examination revealed her need for the correction:

R. E. Cylinder plus 0.25 axis 60 Vision 20/16
L. E. Sphere plus 0.12 with cyl. plus 0.25 axis 180 Vision 20/10—

July 24, after three weeks' use of atropin, without glasses, she felt stronger, her feet felt hot, and her hands were warm and moist. She had no more headaches, but her head felt "big." There was no pain in the eyes, only soreness on pressure. Her appetite was ravenous. She could hardly get enough to eat. Her digestion was excellent. She had no more vomiting nor crying spells. She slept better and had no nightmare, but still had pain in the legs and slight attacks of pain in the groins. She asserted that she was gaining in weight.

It was on this date that she told me that, whereas she used to pass water every fifteen minutes during the day and five or six times during a night, she did not have to break her sleep any more, and that she urinated only two or three times during a day. Also, whereas her urine used to smell bad and show "brick dust deposit," it was now clear and odorless.

July 31, she reported that she slept excellently, and that her bowel movements were freer. Her menstruation was for the first time in her life painless and lasted nearly a week. She had no pain in the legs or groins, and her hands did not feel numb.

August 14, she reported no constipation, and she weighed 104 pounds, but complained of supra-orbital pain on the right side. She accepted for reading:

R. E. plus 1.50 with plus 0.25 axis, 60
L. E. plus 1.75 with plus 0.25 axis, 180

the lenses were to be worn in bifocal form. This was a case of premature presbyopia.

Oct. 5, 1916, she reported that she felt perfectly well in every respect. She weighed 117 pounds and had again taken up housekeeping. Her menses were more frequent and more normal in amount, occurring about every six or seven weeks, and lasting from four to five days. They were somewhat painful before the flow.

POLLAKIURIA AS A SYMPTOM OF EYESTRAIN

While this case is well worth reporting, on account of the patient's manifold symptoms and prompt recovery, the important point in connection with my thesis is the fact that her pollakiuria disappeared during atropinization. Naturally, I jumped to the conventional explanation that the absorption of the atropin diminished the secretion of the urine and thereby remedied the all too frequent micturition, when one of the coincidences so frequent in the practice of medicine happened the same day, July 24, 1915.

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[4] Foster, Michael: Textbook of Physiology, Ed. 4, New York, the Macmillan Company, p. 549.

A working man, aged about 35, came in to report the results of his refraction. Among other things, he told me that he did not have to micturate so frequently as before.

I had determined his refraction about three months before that day, using no atropin, and instilling only a few drops of homatropin as a cycloplegic. As the small amount of homatropin could not explain the permanent improvement, the only conclusion possible was that the relief of the nervous system from the irritation caused by eyestrain must have somehow influenced the frequency of micturition.

I had never heard of pollakiuria as a symptom of eyestrain, so I began a vain search in the medical literature for a previous mention of this form of neurosis in connection with the eye.

The Index Medicus for the last sixteen years does not give any citations of literature on pollakiuria as a symptom of eyestrain. Neither do the accessible books on diseases of the nervous system mention it.

Oppenheim[5] speaks thus of the neurotic aspect of pollakiuria: "Pollakiuria (strangury with frequent evacuation of small quantities of urine [sic]) is occasionally observed." And then: "We often find abnormal irritability of the bladder due to neurasthenia, fear and abnormal introspection."

Of the textbooks on ophthalmology, not one mentions pollakiuria; neither does George M. Gould's[6] storehouse of eyestrain lore give any record of its occurrence. Only Stephenson[7] and Doyne[8] mention a case of true polyuria as probably caused by eyestrain, but no mention was made of pollakiuria.

After having my attention drawn to that neurosis, I began a systematic inquiry as to the frequency of micturition in all my refraction cases, with results as set forth in the accompanying table.

RESULTS OF REFRACTION ON POLLAKIURIA

	Number of Cases	Reported	Recovered or Improved	No improvement
Men	140	55	32	23
Women	176	71	53	18
	316	126	85 (65%)	41 (35%)

From July, 1915, to January, 1918, I determined the refraction in at least 1,500 new cases. Of these, 316 persons (140 men and 176 women), or about 20 per cent. of all cases, suffered from pollakiuria. For example, they urinated oftener than five or six times during the day, or had to get up from their beds to void urine, or both.

Of my 316 patients, 126 (55 men and 71 women) returned to report. Of these 126 cases, 85 (32 men and 53 women), or about 65 per cent., reported great improvement or recovery, while 41 (23 men and 18 women), or 35 per cent., were not improved at all in that particular symptom.

While the figures may seem startling, I do not attach much value to them. The number of cases is entirely too small to give us any valuable statistical figures. In an earlier essay[1] I had seventeen cases and reported seventeen cures, or 100 per cent. recoveries. They also depend greatly on the investigator's opinion as to what constitutes normal frequency of urination. But whether the percentages of recoveries are 65 or 25 or 20 or even 10 per cent. of the cases, the following conclusions stand out preeminently and are difficult to deny:

1. In my series of 316 cases, 140 patients were men. While their number was only slightly smaller than that of the women, the percentage of recoveries in women was twice as large as that of the men, a result very likely due to a greater nervous instability in the women.
2. The frequency of pollakiuria as a neurosis is immensely larger than we thought.

ORGANIC LESIONS AND NERVOUS IRRITABILITY

Bugbee and other urologists and gynecologists find some organic lesion in all, or nearly all, cases of pollakiuria. By experience they have learned that by treating the local lesions, they may bring the frequency of micturition back to normal. Although, in reply to a personal inquiry, Bugbee stated that he had no statistics ready on the results of the treatments, they must have been considerable or the profession would not unanimously connect this symptom with local lesions. These are facts not to be denied. On the other hand, we have here a series of some hundreds of cases of pollakiuria in which the patients were greatly benefited by refraction — a fact also not to be denied.

While I did not give a single one of my patients a physical examination, it is not likely that 100 per cent. of the eighty-five who improved, and of whom I have personal knowledge, had no local pathologic changes when an expert of Dr. Bugbee's caliber found less than 4 per cent. of all pollakiuria cases free from any visible lesions. So taking Dr. Bugbee's figures as correct, we must conclude that while nearly all the patients have some organic lesion, these lesions are only partial causes of the symptom, and that the general nervous system evidently has as much to do with it as the local abnormality has, if not more.

It is generally said that the practice of a specialty narrows the vision of the specialist, that in time every specialist comes to look at the entity of the body through the spectacles of his particular specialty, and that specialists claim they can cure the same diseases by the practice of their widely different methods.

Often the oculist, the proctologist, the gastrologist, the gynecologist and others pride themselves on having found and demonstrated the real cause of a certain malady and the cure of it by their own respective specialties.

It all sounds ridiculous enough, to be sure, but it is still more ludicrous to deny the claims of all these earnest and expert men. Their statements are absolutely true; they really cure their patients' ailments, and each one of us can bear witness to the truth of their contentions. How may this be explained? By what I have termed the phenomenon of multiple causation of symptoms. A symptom is only a local or general manifestation of more than one cause operating in the human body. The elimination of one or more of these causes makes the symptom disappear.

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[5] Oppenheim, H.: Diseases of the Nervous System, Philadelphia, J. B. Lippincott Company, 1904.

[6] Gould, G. M.: Biographic Clinics, Philadelphia, P. Blakiston's Son & Co., 1903.

[7] Stephenson, Sydney: Eye-Strain in Every-Day Practice, New York, Paul B. Hoeber, 1913.

[8] Doyne, R. W.: Brit. Med. Jour., 1910, 2, 361.

In local manifestations, one of the dominant causes is always a local pathologic condition, while another is an irritated or weakened nervous system. As causes are different in values, a cure will mainly depend on the elimination of one or more of the dominant factors.

In my thesis on pollakiuria as a symptom of eyestrain there are at least two causes. One is the local pathologic change in one of the urinary organs, and the other is the hyperirritability of the nervous system caused by eyestrain. If the local lesion is dominant, no amount of correction of refraction will relieve the patient; only local treatment can do it. But when the local lesion is slight or negligible, the relief of the nervous system from the excess of nervous irritation will bring about a cure.

The disturbing cause in my series of cases was eyestrain, but that does not exclude malfunctions of other organs from having similar effects on the bladder.

CONCLUSIONS

1. Pollakiuria, or excessive frequency of micturition, must be strictly differentiated from polyuria and incontinence of urine.
2. In a great percentage of cases, pollakiuria is a neurosis, brought about by malfunction of a distant organ, especially the eye.
3. Contrary to the general medical opinion, pollakiuria is nearly as frequent in men as in women.
4. Before a surgical interference is tried, a careful refraction should be indicated in all cases of pollakiuria, except those in which it would have to be done for reasons other than the excessive frequency of urination.

ABSTRACT OF DISCUSSION

DR. ISAAC HARTSHORNE, New York: Dr. Kahn's differentiation of nomenclature is interesting and seems to be correct. In the first case cited, while evidently an eyestrain case, it would seem possible that the use of atropin for three weeks not only anesthetized accommodation but also reached the general circulation sufficiently to improve its tone together with some action on the smooth muscle fibers of the bladder wall. Dr. Kahn's relieved cases may be classified under functional disorder of the bladder from sympathetic irritation. At least three observers have reported cases of enuresis relieved by proper glasses.

The use of atropin by mouth not only produces cycloplegia but also diminishes the flow of urine by diminishing general glandular activity and by lessening the movements of the bladder wall.

Furthermore, if 1 per cent. atropin is used in the eye for cycloplegia, then approximately 1/120 grain of atropin is instilled into the eye with each drop, or about 1/60 grain in both eyes. Is it not probable that nearly as much of the drug is absorbed into the general circulation from the conjunctival sac as from the mouth and stomach, especially when the tear ducts are not held to prevent the passage of the drug to the nose? If this is so, then 1/60 grain three times a day becomes a faily large dose of atropin, and if continued after two or three days the alterations produced by large doses of atropin might well be expected. Atropin should not be used simply as a diagnostic test, but should be followed up by properly fitted glasses to reduce to a minimum the sympathetic reflex irritation. It is not the cycloplegia produced by atropin which tends to prove that eyestrain caused the bladder irritation, but the result obtained by correct lenses after the atropin has been stopped. It must be admitted that 65 per cent. of Dr. Kahn's cases were more or less permanently relieved; which doubtless would not have been the case had not proper glasses followed the use of one of the atropin group of drugs.

DR. W. W. KAHN, Detroit: I want to qualify Dr. Hartshorne's statement about the use of atropin. Some of the patients received homatropin. A few drops of homatropin would not affect the nervous system as much as atropin would.

As to my method, it simply takes eyestrain symptoms from the domain of uncertainties and guesses and puts it in the domain of certainties. It makes things clear to you and your patients. You know that so many patients get better and so many do not. Arguments which are not based on facts are useless.

DISCIFORM KERATITIS *

JOHN E. WEEKS, M.D.

NEW YORK

This form of keratitis, first fully described by Fuchs, is fairly well known to us all. It is not, however, a common disease, and is not so familiar to the greater number of ophthalmologists that a review of its characteristics will be without value.

Disciform keratitis is characterized by the appearance of a small approximately circular area of infiltration at or near the center of the cornea, accompanied by irregularity of the epithelium covering the infiltrated area, and partial or complete loss of sensation over that area. The infiltration slowly increases. From one to three complete or incomplete concentric zones or rings of denser infiltration appear at varying distances from the center of the patch. About one third of the cornea is usually involved, but a smaller or a much larger area may be included. From one to three weeks after the infiltration begins, one, and sometimes two or three, small yellowish white spots develop in the substantia propria at or near the center of the infiltrated area, located sometimes near the surface of the cornea, sometimes deep in corneal tissues. In many of the cases, fine, fairly straight, grayish white lines are observed, usually radiating from the center of the infiltrated area. These, according to Fuchs, are due to a wrinkling of Descemet's membrane.

The affection continues to progress for a period of from two to four months, and then gradually subsides with a permanent and not very dense corneal opacity throughout the infiltrated area. A quiet condition is reached in from three to eight months after the onset.

The symptoms are not severe unless distressing complications arise. They consist of increased lacrimation, very little pain, photophobia of a mild character, and dimness of vision, the degree of which depends on the density and location of the infiltrated area. There is also some pericorneal injection.

The complications are anterior uveitis; iritis, which may be mild or severe; and increase in tension, which may be very slight, lasting but a day or two, or may be intense, amounting to a severe secondary glaucoma, necessitating operative measures for relief. Corneal ulceration seldom develops; when it does, it is of a superficial character. The etiology is unknown.

Until recently the usual treatment has been of little avail. Cleansing the eye with boric acid solution often enough to keep it free from the slight secretion, and using mild antiseptics, together with measures to prevent the formation of posterior synechiae and to control the symptoms arising from complications, are the only measures that appear to be of value locally. In addition, the general condition of the patient is made as good as possible.

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* Read before the Section on Ophthalmology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

The prognosis is good so far as the integrity of the eye is concerned, provided destruction does not occur because of complications.

The following is a report of three cases I have observed.

REPORT OF CASES

CASE 1.—A. W. S., a man, aged 33, was referred to me by Dr. Henry W. Wandless. The patient had been under treatment by various ophthalmologists for an affection of the right eye for six weeks. A typical condition of disciform keratitis of a mild type was present, namely, a central whitish, opaque spot measuring about 5 mm. in diameter, and irregular in shape. It was situated in the substantia propria about one third of the thickness of the cornea below the anterior surface. It was surrounded by an approximately circular area of infiltrated cornea, consisting of alternating concentric zones of lesser and greater degrees of infiltration, the zones of greater infiltration being narrower than those of lesser infiltration. The zones or rings were not perfectly regular, but varied in thickness; nor was the infiltration of equal density throughout the zones. The epithelium over the infiltrated area was stippled, or slightly roughened, and at the center appeared depressed, on account of the loss of a part of the epithelial layer. There were a few narrow grayish lines radiating from the center of the area apparently at or near the posterior surface of the cornea. There was little irritation, slightly increased lacrimation and some photophobia. There was no pain of moment. The sensitiveness of the cornea was reduced over the affected area. There was a slight pericorneal injection below. The iris was a trifle less mobile than its fellow, but no evidence of exudation in the interior of the eye appeared. The tension was normal. The patient's general health was very good. The urine showed a slight excess of indican, but was otherwise normal. The Wassermann reaction was negative. There was no physical evidence of tuberculosis.

I made a diagnosis of disciform keratitis probably due to external infection, and was of the opinion that recovery would ensue in from six weeks to three months, leaving a pronounced thin opacity.

In regard to the treatment, I advised that a moderate dilatation of the iris be maintained so long as the process appeared to have any activity, provided an increase of tension did not develop. I also advised the bathing of the eye with a hot solution of boric acid twenty minutes three times daily and the introduction of an ointment of mercuric chlorid, 1:5,000, after each bathing. Meanwhile, the system was to be kept in the best possible condition. I advised the wearing of tinted glasses, if photophobia was annoying.

The symptoms of activity in this case gradually subsided, and the healing was complete in about five months from the onset of the affection. The patient's vision is now approximately one-half the normal.

CASE 2.—Mrs. A. L., aged 39, first noticed a slight blurring of the vision of the right eye, Sept. 7, 1917. There was no pain. September 11, the patient consulted Dr. John M. Wheeler,[1] who immediately admitted her to the New York Eye and Ear Infirmary. I was called in consultation, September 12. Dr. Wheeler had observed a faint infiltration of the cornea, had advised the patient to rest in bed, and had ordered the eye bathed one-half hour at a time with a hot solution of boric acid, and the instillation of atropin, 1 per cent., sufficiently often to keep the pupil dilated. September 12, there was a faint, almost circular uniform area of infiltration about 2 mm. in diameter over part of the pupillary area, slightly to the inner side and below the center of the cornea. It was a little more dense at the center than at the periphery. The epithelium over this area was very slightly roughened, that is, stippled. There was no pain. The iris reacted normally. The interior was normal. The vision was $^{20}/_{30}$ +. The vessels of the ocular conjunctive were slightly increased in size and number. The patient's general condition was apparently excellent. The urine, the blood count and the Wassermann reaction were all negative. There was no history of trauma. Although at this stage there was no central distinctive spot and no concentric ring of denser infiltration, a diagnosis of corneal infiltration, probably disciform keratitis in its earliest stage, was made.

Examination with high magnification showed defects in the surface epithelium over the area corresponding to the infiltration. The infiltration consisted of minute isolated deposits apparently situated in the substantia propria immediately beneath Bowman's membrane, extending into only a few of the lamellae, being denser and deeper at the center and growing gradually less toward the periphery of the infiltrated area. The infiltration had the appearance of an aggregation of irregular granules. There was no distinctive central depression or opening which might have been regarded as the point of entrance of an infected foreign body. The cornea was less sensitive over the affected area. Other parts of the cornea, the conjunctiva, the lids, etc., were of normal sensitiveness.

In addition to the treatment advised by Dr. Wheeler, a mercurial was given internally and an ointment of mercuric chlorid and petrolatum, 1:5,000, was introduced into the eye after each bathing.

The granular infiltration apparently ceased to develop for forty-eight hours. Then there was an increase, which continued until a fully developed disciform keratitis was present about two weeks later.

September 15, a slight increase in tension was noticed when the atropin was discontinued. As the slight increase of tension persisted, September 16, pilocarpin, 1 per cent., was instilled twice daily. The anterior chamber was of moderate depth. The tension subsided in two or three days, and the pilocarpin was discontinued. The infiltration increased slowly but steadily. September 24, two partly formed concentric rings or zones of denser infiltration had formed; the limits of the infiltrated area were ill defined. There was no central opaque points or spot, nor was there any pain. The ocular conjunctiva was slightly congested. About September 26, Dr. May saw the patient and advised the use of a 10 per cent. solution of ethyl-morphin hydrochlorid (dionin) once daily. After the first instillation, the tension became high and the cornea steamy, and the patient suffered an attack of acute glaucoma, which lasted two to three days, but was controlled by use of physostigmin (eserin) and pilocarpin. The anterior chamber was deep. October 3, the iris was involved in a mild plastic iritis, with the formation of some posterior synechiae, particularly at the lower pupillary margin. There was no pain, the tension was normal, and the anterior chamber was considerably deeper than normal. The iris now took on a greenish hue. The aqueous was not appreciably turbid. There was a very small, central, deep-seated, yellowish white spot. In addition to general tonic treatment, mercury by inunction was advised, and the desirability of using tuberculin was considered and recommended. About October 22, Dr. May, who was in charge of the case, gave tuberculin T. O., 1 mg. hypodermically, and repeated the dose four or five days later, increasing the quantity. There was a mild local reaction, evidenced by increased flushing of the ocular conjunctiva after each injection, and a very slight general reaction after the last.

October 30, I saw the patient in consultation with Drs. May and Reese. There was then a decided involvement of the anterior portion of the uveal tract. The anterior chamber was deep. The pupil was irregular, because of posterior synechiae. Atropin had been withheld because of the history of increased tension, but it was now used vigorously without causing any increase in tension. Ethyl-morphin hydrochlorid had again been employed without causing any appreciable change in tension. It was suggested that tuberculin in therapeutic dose be given every four or five days, and that mercurial inunctions be continued and given regularly, precautions against ptyalism being taken. The vision was $^{6}/_{200}$. The grayish white spot in the corneal tissue was about 1 mm. in diameter. This general line of treatment was continued. The patient was again seen in consultation with

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[1] In the absence of Dr. C. H. May from the city this patient first came under the care of Dr. John M. Wheeler for the treatment of this affection. Dr. Wheeler called me in consultation and I was privileged to see the case frequently at first, less frequently later up to November 27. By the courtesy of Dr. May, who has furnished me with subsequent data, I am enabled to report the case.

Drs. May and Reese, November 27. At this time it was very evident that a decided change for the better had taken place. The pericorneal injection had largely disappeared. The anterior chamber was not as deep as before. The iris was more nearly of a normal hue. The vision was improving. The central grayish white spot was smaller and less dense. The treatment consisted of tuberculin administered hypodermically. Mercurial inunctions and general tonic measures were administered systematically, also atropin, and ethyl-morphin hydrochlorid. The patient steadily continued to improve. About January 20, she was virtually well. There still remains a thin opacity of the cornea throughout almost the entire area of the infiltration. The central white spot is scarcely more dense than the surrounding opacity. There are still a few small synechiae showing little, if at all, when the pupil is contracted. The vision equals 20/50.

A peculiar feature of the case is the almost entire absence of pain. The use of tuberculin and mercury appear to have been beneficial.

Case 3.—Mr. D. F., aged 18, was brought to my office by Dr. A. J. Greenberger, Nov. 22, 1917. November 12, the patient observed that the left eye was watering and that his vision through it was poorer than through the right eye. He thought he had pink eye. There was no pain. He consulted an ophthalmologist, who made a diagnosis of erosion of the cornea.

When I saw him, there was an irregularly circular infiltration of the left cornea, slightly above and to the nasal side of the center of the cornea, as well as a few spots of infiltration extending downward and toward the nasal side. The epithelium was roughened over the circular area, and a circular zone of denser infiltration was disposed just inside the border of the circular patch of infiltration. The anterior chamber was deep and the tension normal. The cornea was sensitive over the infiltrated area. The iris reacted readily. The vision was 3/200.

In addition to general tonic treatment, red mercuric iodid, 1/30 grain, three times a day, was prescribed. Locally, bathing the eye with a hot solution of boric acid and sodium borate, the instillation of atropin, 0.5 per cent. solution, often enough to keep the pupil moderately dilated, and the introduction of an ointment of mercuric chlorid and petrolatum, 1:5,000, in small quantity, into the eye after each bathing.

December 3, there had been but little change. In addition to the foregoing I advised a diagnostic dose of tuberculin T. O., 1 mg., to be repeated four days later in a dose of 1.5 mg., if no reaction was observed after the first dose. The tuberculin was given, resulting in a mild general reaction and a slight increase in the flushing of the ocular conjunctiva of the affected eye.

December 13, the iris was slightly congested. The cornea was about the same, except that a very small yellowish white spot had become apparent near the lower inner part of the irregularly circular patch of infiltration, situated about half way between the anterior and posterior surfaces of the cornea. A faint inner zone of denser infiltration was beginning to appear. The ocular conjunctiva was slightly congested, and two small vessels extended from the margin of the cornea into the infiltrated area.

December 20, the area of infiltration was larger. The iris was widely dilated. The tension was normal. The vascularity of the cornea was slightly greater. I continued the use of tuberculin B. E. in doses of 1/500 mg., injected every four or five days. The other features of the treatment remained the same.

December 31, there was a marked improvement.

Jan. 24, 1918, the eye continued to improve, vision being 20/100.

February 7, the infiltration was less. Only one small vessel ran from the conjunctiva to the spot of infiltration. The patient suffered no inconvenience.

The treatment now consists of tuberculin B. E., 1/500 mg., every four days, red mercuric iodid, 1/30 grain three times a day, and a nutritious diet. Locally the eye is cleansed with boric acid solution twice daily, an ointment of mercuric chlorid and petrolatum, 1:5,000, twice a day is applied, and atropin, 0.5 per cent. solution, is occasionally administered to provide against the possible formation of posterior synechiae.

February 28, the eye was quiet. A whitish, partly opaque patch occupied the site of the infiltration. The epithelium was intact and smooth. The vision was 20/50. Local treatment was discontinued. I advised that the use of tuberculin be continued four weeks longer.

OPINIONS FROM MEDICAL LITERATURE

Under the name of abscessus siccus corneae, Arlt of Vienna described this affection of the cornea as early as 1870, according to Fuchs, and taught the peculiarities of disciform keratitis to his students. Vossius[2] gives a very good description of disciform keratitis, but mentions it as an abortive interstitial keratitis. Grünert[3] reports seven cases, accepting Vossius' views of its proper classification. Fuchs[4] reviews the literature up to 1901, and reports on twenty-eight cases. In the seventh edition of his textbook, p. 189, he had described this affection as abscessus siccus corneae, after the teaching of Arlt, employing the designation "disciform keratitis" in 1901. Fuchs has observed disciform keratitis only as a monocular affection. Zani[5] reports three cases. In one case there is a history of a patient's having rubbed his eyes with hands contaminated with secretions from vaccine pustules.

Peters[6] reports a number of cases. He attributes the affection to a necrobiosis of the tissues, the true nature of which is not fully understood, resulting probably from disturbed innervation; and consequently he attributes the affection to impairment of nutrition. Injury to the endothelial layer induced by the edema resulting from trauma is responsible for the opacity. Infection or an abscess is responsible for the disk only in exceptional cases. Hadano,[7] working in Peters' clinic, examined tissues scooped from the center of the affected area in a case of disciform keratitis. He is of the opinion that he has confirmed Peters' contention, declaring, "A study of the tissue removed revealed no signs of inflammatory infiltration — only a few nuclei were found in the periphery and none in the central portion." No micro-organisms were found. Meller's[8] observations were based on the histologic examination of an eye which presented clinically the appearance of parenchymatous keratitis with a disk-like opacity in the deeper layer of the corneae. Secondary glaucoma developed as a result of a complicating uveitis. A shallow corneal ulcer had formed at the center of the cornea, and the globe was enucleated.

Findings.—The center of the cornea was the seat of an infiltrated area which included the substantia propria from Bowman's to Descemet's membrane. The epithelium was infiltrated with free, small, round cells, and was reduced to several layers at the center of the cornea. Bowman's membrane was normal. Descemet's membrane was thrown into numerous folds. Closely adherent to Descemet's membrane posteriorly was a thick exudation of fibrin which had the form of a disk. Meller summarizes as follows:

> "1. It consists of a well circumscribed disease focus, which undoubtedly is produced by an infection. The remainder of the cornea is healthy, with the exception of slight secondary changes.

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2. Vossius: Berl. klin. Wchnschr., 1885, Nos. 43 and 44.
3. Grünert: Klin. Monatsbl. f. Augenh., 1900, **38**, 10.
4. Fuchs: Klin. Monatsbl. f. Augenh., 1901, **39**, 513.
5. Zani: Ann. di ottol., *Pavia*, **41**, 756.
6. Peters: Arch. f. Ophth. (Graefe's), 1906, **57**, 93.
7. Hadano: Ztschr. f. Augenh., October, 1905.
8. Meller: Klin. Monatsbl. f. Augenh., October, 1905.

> "2. The condition consists of an inflammatory infiltration, which proceeds from a point of infection in the surface, uniformly in all directions into the surrounding parenchyma, and also into the depth of the cornea, and produces a disk-shaped lesion with more strongly saturated edges.
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> "3. This tendency to spread soon disappears, and a total necrosis of the infiltrate appears, which affects probably the cause of the process as well. Bacteriologic examination both intra vitam and in the sections was negative. This necrosis affects first the infiltrate, while the corneal lamellae remain intact, except where they are destroyed by the infiltration. The subsequent long-continuing inflammatory condition of the eye is the reaction of the healthy tissue against the dead tissue in the corneal parenchyma, a process of sequestration which in the avascular cornea is necessarily slow. The ultimate prognosis as to vision is poor because the tissue is infiltrated from the margin by cells, which finally produce scar tissue, and remain as a permanent opacity."

He believes that keratitis punctata superficialis is produced by the same pathologic changes.

Posey[9] reports two cases. In one case both eyes were involved. Veasey[10] reports one case. Zentmayer[11] reports three cases, one of which followed a variolus ulcer and one, herpes corneae. Landman[12] reports two cases, both of which followed doubtful injuries. There was no irritation in the one, and slight irritation in the other. He regards the condition as one of inflammatory infiltration. Monthus[13] describes two cases, one of which was bilateral, coming on after articular rheumatism, with cardiac lesions, in a patient with inherited syphilis. Under the title "Disciform and Postvaccinal Keratitis," Schirmer[14] reports seven cases resembling Fuchs' disciform keratitis, some of which were apparently due to infection with vaccine virus. He experimented with rabbits and apparently convinced himself that disciform keratitis in the human being is the result of infection with this virus. Erdmann[15] observed three cases. Each had increased tension at some period of the disease, a symptom that he thinks is often overlooked. He regards the disease as a neuropathic affection, and believes that the tissue necrosis is not due to an unknown bacterium, as suggested by Fuchs, but rather to disturbed innervation — the view already advanced by Peters. E. V. L. Brown[16] reports two cases, one in a boy with the stigmata of inherited syphilis. There were extensive posterior synechiae.

RESULTS OF OBSERVATIONS

In the seventy-two cases observed and collated, the youngest patient was 11 and the oldest 62 years of age. Disciform keratitis is a rare disease and with few exceptions is monocular.

Its period of activity varies from six weeks to five months. It may run a very mild course, or it may be accompanied by complications that may necessitate removal of the eyeball.

The etiology is not proved. The history of the cases and the changes observable at the onset of the affection make it evident that the first departure from the normal condition takes place in the very superficial parts of the cornea, such as the epithelium and outer lamellae, thus strongly supporting Fuchs' contention that the process is due to external infection. The clinical picture is so different from that following other forms of tissue necrosis due to disturbances of innervation and consequent impairment of nutrition, and the histologic findings (Meller and Hadano) so indicative of local irritation, that the theory of Peters apparently cannot be accepted. The symptom that seems to support Peters' views is that of loss of sensibility, which occurs in many but not in all of the cases. The nature of this infection is yet to be determined.

Schirmer's suggestion, based on his experiments with vaccine virus does not carry conviction. None of us who has seen infection of human eyes with vaccine virus has observed a condition resembling disciform keratitis. Infection of the eye with vaccine virus usually involves the eyelids. It has been my fortune to see also involvement of the cornea in two cases. The infiltration was not accompanied by the formation of definite concentric rings of denser infiltration, nor was there a development of the usual whitish yellow spot or spots. In these cases the infiltration disappeared, leaving almost no trace, the process clearing up within three weeks. The behavior of the patients treated with tuberculin, as reported in the foregoing, together with the clinical manifestations of the disease, strongly suggests a tuberculous process, in spite of the fact that the histologic examination (Meller and Hadano) failed to disclose microorganisms.

While in other respects the affection does not present the ordinary clinical picture of tuberculosis of the cornea, the appearance of the yellowish white spot, after the disease has existed from ten days to three or four weeks, closely resembles the yellowish white foci observed in tuberculous keratitis. The apparent local reaction to diagnostic doses of tuberculin and the apparently favorable results from therapeutic doses of tuberculin are very suggestive of a tuberculous process. The effect of tuberculin in two cases is, of course, not enough to establish etiology, but it is enough to encourage the further use of tuberculin in these cases and the further observation of such cases with a possible tuberculous origin in view.

ABSTRACT OF DISCUSSION

Dr. William Zentmayer, Philadelphia: Disciform keratitis is a rare one, although it probably occurs with greater frequency than the literature would indicate. The number of reporters, most of them having observed several cases, is small, indicating that the disease is not generally recognized. It is, I believe, sometimes diagnosed wrongly, the presence of a disciform nebule, but lacking other features of the true affection, leading to the error. Knowing this mistake to have been made, I said in reporting a case of disciform keratitis some years ago, that the term, emphasizing as it does only one feature of the disease, led to the inclusion of corneal opacities presenting an annular form.

As Dr. Weeks points out, and as supported by one of his cases, anesthesia of the cornea over the affected area is not a constant feature. It has been present in only one half of the cases I have seen. The disk is often eccentrically located in the cornea. Occasionally, there is a development of superficial vessels at the limbus corresponding to the nearest approach of the disk to the corneal margin. I agree with Dr. Weeks that the etiology is unknown, and I am not willing to accept a neuropathic origin. Wagner reports a case occurring in a man 77 years of age. His conclusions are that disciform keratitis is characterized by a disklike part of strongly altered corneal tissue, lying deep; that it is caused by toxins produced by undiscovered micro-organisms existing in the epithelium. The finding of giant cells in the exudate in the anterior chamber of an inoculated animal is significant.

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[9] Posey: Ophthalmology, 1906, **2**, 434.
[10] Veasey: Medicine, December, 1906.
[11] Zentmayer: Ophth. Rec., **24**, 42.
[12] Landman, O.: Arch. Ophth., 1907, **36**, 367.
[13] Monthus, A.: Arch. d'Ophh., 1906, **27**, 105.
[14] Schirmer: Arch. f. Ophth. (Graefe's), 1908, **59**, 133.
[15] Erdmann: Ztschr. f. Augenh., 1909, **24**, 249.
[16] Brown, E. V. L.: Ophth. Rec., August, 1908, p. 418.

The differential diagnosis of disciform keratitis is of great interest and importance. The causes of this condition are numerous. Should we accept a tuberculous origin for this affection, could it not be explained in the same way as the cases of interstitial keratitis which we see develop in patients with inherited syphilis as the result of a trauma?

Dr. John Green, Jr., St. Louis: Keratitis disciformis has generally been regarded as a self-limited disease, practically uninfluenced by any form of treatment and terminating in more or less opacity, due to the formation of scar tissue. Posey, who in 1904 recorded the first American case, remarks that "therapeusis is unavailing." This view is shared by most textbook writers, who content themselves with offering such therapeutic suggestions as would presumably be of benefit in any chronic corneal inflammation.

In a case I reported in 1913 prompt improvement and a rapid cure followed repeated subconjunctival injections of a 2 per cent. saline solution, after the failure of classical methods.

Dr. Arthur G. Bennett, Buffalo: I have seen three cases of this type. The treatment that I applied to two of these cases was very satisfactory, after I had tried all the classical methods for five or six weeks without getting any improvement. Under cocain anesthesia, I flooded the eye with fluorescein, opened up the area of infiltration with a knife and then with a sliver of wood I cauterized the necrotic area thoroughly with phenol. I discharged that patient cured in a week.

A young man, who had been in the care of a very competent oculist in another city for three months, was sent to me with a diagnosis of tuberculosis. I employed the treatment mentioned at once, and with the same good result. The necrotic area is stained with fluorescein immediately you open into it so that the exact limits of this area are delineated. Cauterizing that area with phenol destroys absolutely every part of the infiltration. I was gratified at having a perfect recovery within a week; and that man was accepted in the Officers' Reserve Corps within a month, and is now serving with the Army.

Dr. Will Walter, Chicago: Improvement following the administration of tuberculin is not more than suggestive evidence of tuberculous infection. Observations are being made with increased frequency that antibody forming vaccines and neutralizing serums are more or less interactive. Antityphoid vaccine has occasionally cleared up staphylococcus infections, and antitoxic streptococcus serums have improved conditions due to other infections. Tuberculin often raises the white cell blood count. Sahli made this a diagnostic point in mild tuberculosis. I have employed staphylococcus vaccines in recurrent furunculosis, and with good effect, although often without raising the white cell count. In the few cases of ulcers of this type which I have observed and treated it has been used with this thought in mind and not with the idea that it was a tuberculous lesion, although it may be. The same therapy is employed as a routine in all forms of corneal ulcer whenever the white cell count is low.

It has always been used with measures which promote local resistance. Prominent among these are the high frequency current, with vacuum tubes, through the closed lids, and later the sinusoidal current; and last but not least heat, not as usually applied, but by the sanatorium method, which gives you a much greater degree of heat than by direct methods, and not persistently applied, but at intervals of two or three hours. The sinusoidal current is of value in this condition because its waves prevent scarring and stimulate the nerves to normal function. The results from this technic will surprise those who have not tried it. It certainly is very effective in shortening the duration of this disease, for my patients have not had the long period of suffering which the records tell us must be expected.

Dr. Edgar S. Thomson, New York: I have seen two cases of disciform keratitis—the first I have ever seen. I do not see how there can be any other cause for the condition other than a low grade infection. The whole appearance and characteristics of the condition are infective.

I treated a young man, otherwise in perfectly good health, for six weeks without the slightest benefit, when it occurred to me to destroy the infective material as Dr. Bennett described. I applied Shahan's thermaphore in this case, heated to 160 F., directly over the disciform spot, for one minute. He made a very rapid recovery. The eye began to whiten at once, the hypopyon absorbed, and he was out of the hospital in a week, the whole case having lasted a little over two months.

Another case was seen in consultation, and I did not have a chance to apply that treatment; but we have had very good success with the thermaphore in other cases of similar character.

Dr. F. Park Lewis, Buffalo: I agree with Dr. Bennett that disciform keratitis is much more common than we realize. There are two reasons why it has not been recognized; first, because attention has not been called to it as definitely as it should have been, so that it escapes observation; and second, because in all probability it is endogenous rather than exogenous in its infection. Dr. Blaauw reported a case before the Ophthalmic Club of Buffalo. It had the typical characteristics which have been outlined. The patient was a strong, rugged, well nourished man, who gave no other evidence of illness. However, his mouth was as insanitary as one could imagine it to be. There were evidences of pyorrhea and root abscesses. Great improvement followed the extraction of the infected teeth and the treatment of the pyorrhea.

I believe in the use of protein toxins. Dr. H. Gideon Wells, who is now working on the subject of protein toxins, told me that Dr. Kessler has for the first time succeeded in isolating a sufficient quantity of the histidins to make experimentation practicable.

They have reached the conclusion that all proteins give off very easily absorbable toxins, which produce a wide range of symptoms. When a case of disciform keratitis occurs, it is of great importance to search for a focal nidus of infection.

Dr. John M. Wheeler, New York: Two things impressed me very definitely in Dr. Weeks' case, which I saw first. There was an entire absence of symptoms, except for impairment of vision. Two days before I saw her this patient noticed that she did not see well with her right eye. There were absolutely no other symptoms. There was no pain or discomfort or photophobia to indicate that there was anything wrong with the eye. The eye was treated with atropin and hot baths, and in the first few days was apparently absolutely quiet, except for this round area of infiltration. Ethylmorphin hydrochlorid was suggested, and on the fourth day a drop of a 2 per cent. solution was instilled into the eye. The eye had been absolutely quiet up to this time. Within a few hours after the instillation there was an attack of acute glaucoma. It is impossible for me to dissociate the use of the drug in this case from the acute glaucoma.

Dr. Rudolph H. von Kotsch, Chicago: A few weeks ago a patient came to me who had been treated for two months by another doctor. He did not improve and became dissatisfied. Some friends suggested the use of argyrol; so he used that for four weeks, but the eye continued to grow worse. Then he was referred to me. I used the actual cautery, but very lightly. The following day the eye showed improvement. In about two weeks it cleared up entirely, and vision is now almost normal.

Dr. Jesse S. Wyler, Cincinnati: Is it not possible that some of the men who have discussed this paper have confused true keratitis disciformis with deep corneal abscess and centralized interstitial keratitis? I have seen only two cases of disciform keratitis in the European clinics, and as I remember them, there was no stippling of the cornea above the lesion. There were no synechiae and no hypopyon. I also agree with Dr. Walter in the action of tuberculin, considering it merely a means of increasing leukocytosis according to the paraspecific theory advocated by Darier.

Dr. John E. Weeks, New York: This is a microbic infection. The forms of treatment that have been successful in these cases point to the destruction of a causative agent, apparently a micro-organism. In regard to the possible endogenous nature of the infection, I do not think that theory is sound. In the cases which I have observed the disturbance is primarily a superficial one, never a deeply seated one, which it would be if it were metastatic. Secondly, it is advisable to give patients with disciform keratitis diagnostic tuberculin injections and see if a local reaction is produced. The result will aid us to determine whether this affection is or is not due to infection with tubercle bacilli. Hypopyon and deep ulceration are extremely uncommon, and when they occur must be due to added infection by some other micro-organism.

THE EFFECT ON THE KIDNEY OF URETEROVESICAL ANASTOMOSIS

EXPERIMENTAL AND CLINICAL REPORT *

ANDERS PETERSON, M.D.
ROCHESTER, MINN.

Baker, in 1878, reported a successful implantation of the left ureter into the bladder by operation through the vagina, for the relief of incontinence due to the opening of the ureter into the anterior wall of the vagina. In 1889, McArthur reported a similar case, in which he operated successfully. Davenport, in 1890, implanted an anomalous ureter by the vaginal route, with good results. In 1894, Bazy reported two instances of ureterovaginal fistula. One patient had an infected hydronephrosis which improved after the implantation of the ureter. Bazy tied a small catheter into the implanted ureter and suggested the use of pelvic lavage with silver nitrate solution, 1:500 to 1:100, for infection of the kidney. He also mentions two cases of ureterovesical implantation performed by Novaro in 1892. Franz, in 1907, published a report of nine experiments on dogs, with excellent results following ureterovesical implantation; also seventeen clinical cases in which four patients were cystoscoped, and the implanted ureter functioned normally. Krönig, in the same year (1907), reported the cases of nine patients operated on for ureteral fistula, following hysterectomy for cancer. His assistant, Dr. Rauscher, cystoscoped these patients from five months to one and one-fourth years after the implantation. Good function of the kidney was found in five cases; two showed stenosis and slight hydronephrosis. In two cases of bilateral implantation there was hydronephrosis on the left side and good function on the right side in one, and normal function on both sides in the other.

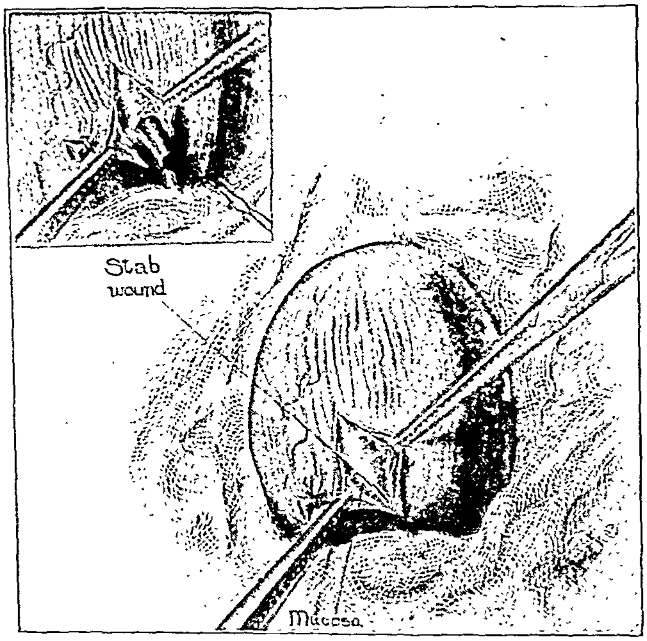

Fig. 1.—Coffey technic employed for implanting the ureter into the bladder; serous and muscular coat split and undermined for embedding of the ureter; (inset) split ureter pulled within the cavity of the bladder through the stab wound in the lower angle of the incision.

TYPES OF TECHNIC

Coffey, in 1911, published a technic for implanting the ureter or the common duct into the intestine. This consists of splitting the serous and muscular coats for three fourths of an inch and entering the lumen of the bowel through a small stab wound in the mucosa. The ureter is pulled well into the lumen by means of an anchoring suture placed through the split end of the ureter, and tied three fourths of an inch below its entrance. The serous and muscular layers are then approximated around the ureter, and one stay suture is placed one-fourth inch above the site of the anastomosis (Figs. 1 and 2).

Stiles' technic consists of entering the lumen of the bowel through a stab wound, and approximating the intestinal wall, without further dissection over the ureter. The wall of the ureter is also caught in these sutures. He omits the splitting of the ureter on one side, as well as the stay suture. These methods have been used with slight modifications in our work for implantation into the bladder (Figs. 3 and 4).

Furniss has recently published a simple method of ureterovesical anastomosis, consisting of the penetration of a double fold of the bladder wall with an artery forceps, and of the pulling of the severed ureter through both openings made by the forceps. The ureter is secured to the bladder wall by a few interrupted sutures at its lower entrance into the bladder, and the end is permitted to hang free in the cavity of the bladder. The anterior opening is then closed (Figs. 5 and 6).

A technic suggested by Mann of the Mayo Clinic, a report of which has not heretofore been published, has been used in a few of our experiments. Two parallel incisions, one-fourth inch in length and one-half inch apart, are made at right angles to the long axis of the bladder, extending down to the mucosa. This seromuscular bridge is undermined, leaving the mucosa intact. A small stab wound is made through the mucosa at the site of the lower transverse incision. The severed ureter, having been split for one-fourth inch on its anterior surface and armed with No. 00 catgut, is pulled beneath the bridge from above downward and anchored to the inner surface of the wall of the bladder one-half inch below the opening. One or two interrupted sutures are made on each side of the ureter, approximating the transverse incision up to the ureter. No suture is placed into the ureter except the one put through the flap, for the purpose of securing it to the inner side of the wall of the bladder (Figs. 7 and 8).

In making the experimental and clinical observations described in this paper, it has been my purpose to evolve a technic for the reimplantation of the ureter into the bladder, and to study the effect of such operation on the kidney and ureter. Unilateral implantations

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* From the Mayo Clinic.

* Read before the Section on Genito-Urinary Diseases at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

* Because of lack of space, this article is abbreviated in The Journal. The complete article will appear in the Transactions of the Section and in the author's reprints.

were performed on eighteen dogs and bilateral implantations on three, giving a total of twenty-four observations.

Coffey's technic was used in eight cases. Observations of the end-results were made from one day to five and one-third months after operation. One animal died from peritonitis on the sixth day. The kidney showed slight hydronephrosis. It was possible to make the ureter leak at the site of anastomosis (Case 1). One death occurred at the end of twenty-four hours. Both ureter and pelvis were dilated, and miliary abscesses were found throughout the kidney. There was also a small localized abscess at the site of the implantation (Case 6). A third animal died from distemper on the tenth day. The pelvis and the ureter both showed a slight hydronephrosis (Case 8). Five animals were examined from three weeks to five and one-third months after operation, and showed an entirely normal kidney and ureter. Two observations on the technic were made:

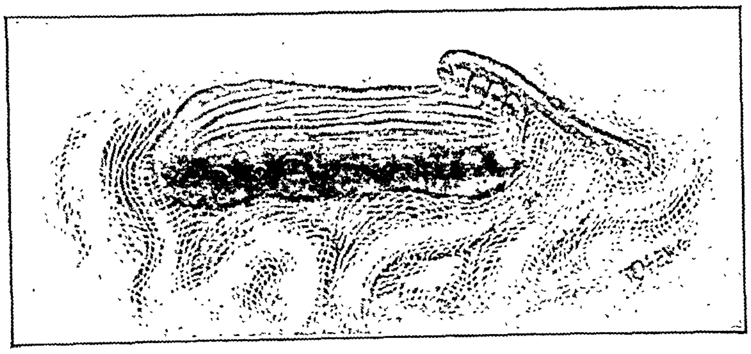

Fig. 2.—Coffey technic completed with bladder everted out of the abdomen.

1. In all instances the ureter was implanted on the posterior wall of the bladder a short distance toward the median line of the original insertion, with the bladder pulled well out of the pelvic cavity. It is convenient and natural to embed the ureter from below upward, but when this is done and the bladder is replaced into the pelvis, an acute angulation in the ureter occurs just at the site of the union with the bladder. If the implantation is reversed, that is, from above downward, the ureter will lie in a line with its entrance through the wall of the bladder. In order to have the open side of the ureter facing into the cavity of the bladder, the splitting of the ureter must be done in its anterior wall (Fig. 9).

2. After some observation the last stay suture, placed about one-fourth inch above the site of implantation, was omitted, as the implantation is performed with the bladder empty and in a state of acute contraction. When this viscus becomes distended a great disproportion occurs between this included section of the ureter and portion of the bladder, and the ureter may be acutely kinked and even pulled out of the wall of the bladder, as occurred in one of the cases (Case 11, Fig. 10).

Stiles' technic was carried out in eight cases, with the modification of splitting the anterior aspect of the wall of the ureter for about one-fourth inch. No suture, except the anchoring suture, was permitted to enter the wall of the ureter. Care was taken to avoid any injury to the proximal end of the severed ureter, and no forceps was placed over the end. A forceps was placed on the side of the bladder and the ureter cut with a thin scalpel about 1 cm. above this clamp. While the sutures infolding the ureter in the wall of the bladder were being tied, a thyroid needle was used as a seeker in order to avoid any undue compression on the anastomosis (Fig. 4). There were six complete successes in this group of eight operations. In one case (Case 11) the ureter pulled out of the bladder. Here the additional stay suture had been used. One animal, sacrificed in a physiologic experiment one and one-third months after operation, showed an advanced pyonephrosis (Experiment 12, Fig. 17).

Five operations were done with the technic devised by Mann. Hydronephrosis resulted in one case four months after the operation. In four cases the kidneys and ureters were normal.

Three implantations were done by the method of Furniss, with normal results. One was a bilateral implantation done at one stage. The placing of a clamp over the proximal end of the ureter was, however, omitted. The small amount of urine leaking from the ureter in such cases will cause no disturbance unless there is previous infection of the kidney, and then a moist pack placed around the ureter will take care of the trouble.

In order to work out the technic, a cystoscopic examination was made under anesthesia in four normal female dogs and in four dogs whose ureters had been implanted. With the animal in the dorsal position, a small speculum was introduced into the vagina and sufficient traction exerted on the labia to bring the urinary meatus into view from its normal location behind the pubic arch. The cystoscope was then quite readily introduced. The ureters were catheterized with No. 4 or No. 5 ureteral catheters in the normal animals. There was obstruction to the catheter in two of the implanted cases; in two others no obstruction occurred.

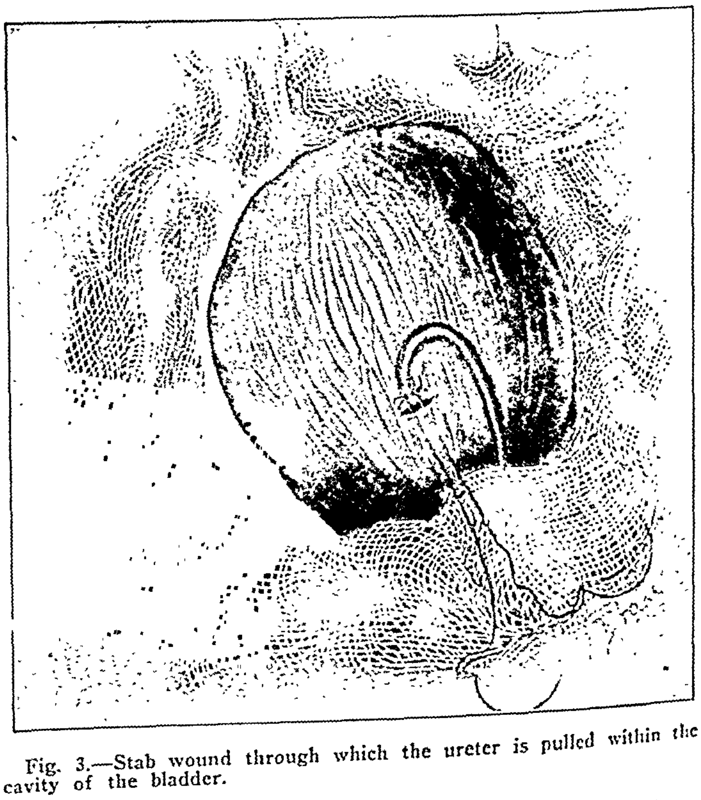

Fig. 3.—Stab wound through which the ureter is pulled within the cavity of the bladder.

In the review of the results of the twenty-four experiments, it was found that there were entirely normal kidneys and ureters in fifteen instances, slight hydronephrosis in two, marked hydronephrosis in one, miliary abscesses of the kidney in one, pyonephrosis in one, normal kidney and hypertrophied ureter in two, and the ureter pulled out in two (Tables 1 and 2). Fifteen implantations (62.5 per cent.) were complete successes. Normally functionating kidneys, including two cases with a slight hydronephrosis, were found in nineteen (80 per cent.). There was complete failure from stenosis, infection and the pulling out of ureters in five cases (20 per cent.).

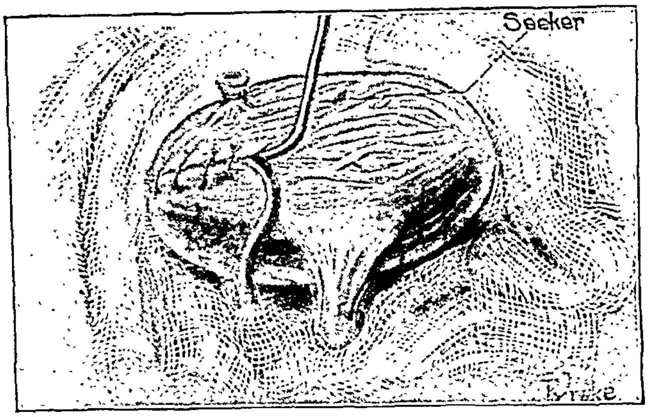

Fig. 4.—Enfolding of the wall of the bladder over the ureter, a seeker being used to avoid compression.

Early in these experiments, fine silk was used for suture material, and in several instances concretions formed around the sutures in the bladder. This did not occur when catgut alone was used.

It is of interest to note that in two cases (Cases 19 and 21) the kidneys were entirely normal, the ureter was hypertrophied and there was no evidence of dilatation. Partial stenosis takes place at the site of the implantation and the muscularis of the ureter undergoes compensatory hypertrophy, consequently dilatation of the pelvis does not occur until this compensation is overbalanced.

TABLE 2.—SUMMARY OF DOG CASES

Number of dogs used in experiment	21
Number of ureters transplanted	24
Coffey's technic	8
Stiles' technic of	8
Mann's technic o	5
Furniss' technic	3
Number of dogs cystoscoped	4
Obstruction to ureteral catheter	2
No obstruction to ureteral catheter	2
Death from	1
Death from	2
Death from	1
Death from distemper	2
Killed in fight	1
Sacrificed in physiologic experiments	6
Nephro-ureterectomy	7
Exploratory operation for result	1
Time elapsing between operation and study of result	1 day to 5⅓ mo.
Normal kidney and ureter	15
Slight hydronephrosis	2
Marked hydronephrosis	1
Pyonephrosis	1
Miliary abscess in kidney	1
Normal kidney and hypertrophy of ureter	2
Normally functionating kidneys including two with slight hydronephrosis (80%)	19
Failure from	1
Failures from	2
Ureter pulled	2
Complete successes (62.5%)	15

Slight dilatation of the pelvis and ureter was found in two cases (Cases 1 and 8), six and ten days respectively after implantation. This was probably owing to edema of the lower end of the ureter and of the wall of the bladder caused by trauma, which subsided in a short time. The utmost care should be taken to minimize trauma during the operation.

In view of the end-results and the simplicity of the operation, the modification of Stiles' technic seems the most suitable in ureterovesical anastomosis. The successful outcome of ureterovesical implantation depends entirely on the technic. This consists of: (1) rigid asepsis to prevent peritonitis and ascending renal infection, (2) a suitable mechanical scheme to establish waterproof anastomosis without causing compression of the ureter, (3) the avoidance of any suture that will enter the wall or lumen of the ureter other than the anchoring suture at its end, and (4) the avoidance of placing any clamp whatever across the extremity of the ureter used in the anastomosis.

CLINICAL REPORT

In twenty-one cases in the Mayo Clinic, the ureter has been implanted into the bladder and the effect on the kidney has been noted. Fifteen patients had extensive resections for tumor of the bladder, and implantation of one ureter; four had ureterovaginal fistula; in one the right ureter opened into the urethra, and in one the left ureter opened into a diverticulum.

TABLE 4.—SUMMARY OF RESULTS OF TRANSPLANTATIONS

Number of cases cystoscoped following transplantation	17
Length of time elapsing between transplantation and cystoscopic examination	18 days to 4½ years
Dilated meatus	9 (54%)
Meatus not seen	4 (23%)
Meatus normal	3 (18%)
Meatus contracted	1 (6%)
Contraction of transplanted meatus	7 (41%)
No obstruction to ureteral catheter	8 (47%)
Obstruction to catheter noted	3 (18%)
Infection of specimen from few pus cells to cloudy urine noted	6 (35%)
Normal function, phenolsulphonephthalein and normal pyelogram	5 (30%)
Small	3 (18%)
Norma	4 (23%)
Functionless kidney	5 (30%)
Dilatation of ureter noted at operation—Cases 10 and 16	2 (12%)
Ureter dissected from dense scar tissue—Cases 5, 12 and 15	3 (18%)

Kidneys showing normal function, 53%; fair function, 18%; functionless, 30%.
Deducting Cases 5, 10, 12, 15 and 16 = normal kidneys, 75%; fair functionating kidneys, 25%.

The patients who were operated on for malignancy and returned for examination have been longest under observation, three for four years and eight for from three months to one year. When implantation was done for conditions other than tumor of the bladder the time elapsing between the operation and the cystoscopic examination varied from eighteen days to four months. The cystoscopic examination consisted of a

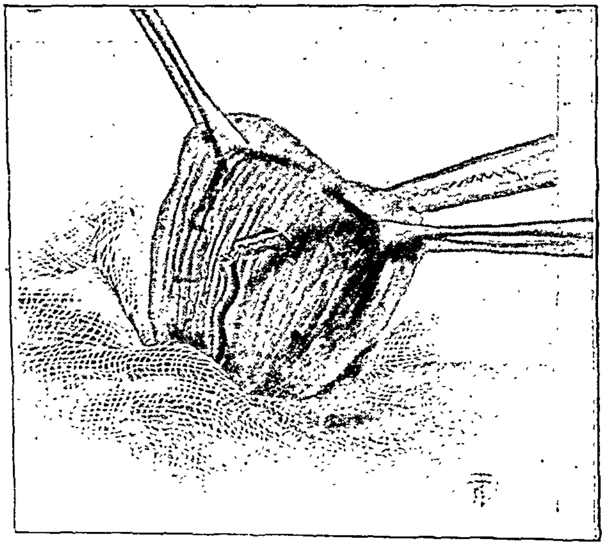

Fig. 5.—The Furniss technic for the implantation of the ureter into the bladder.

careful inspection of the entire bladder. The condition of the implanted meatus as to size and contractions and the appearance of the excretion were noted. Whenever feasible, both ureters were catheterized and a differential functional test with phenolsulphonephthalein was done, followed with a pyelogram of the implanted side. In the cases in which the implanted ureter could not be catheterized, a Garceau catheter was passed well up on the normal side, urine from the bladder was taken from the implanted side and a differential test made. When neither side was catheterized, indigocarmin was given intravenously, and the time of its appearance and the intensity of the color as it appeared at the meatus were noted (Tables 3 and 4).

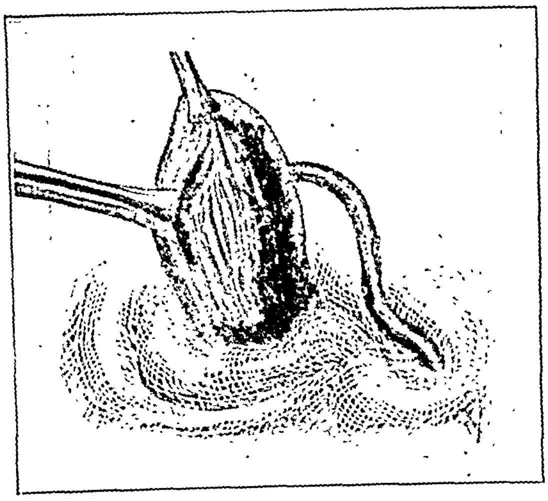

Fig. 6.—The end of the ureter lies free within the cavity of the bladder.

Four patients died following resection of carcinoma of the bladder and implantation of one ureter. At necropsy, the cause of death and the result of the implantation were shown (Table 5).

Seventeen of the twenty-one patients were cystoscoped from eighteen days to four and one-half years after operation. The normal output of phenolsulphonephthalein and a normal pyelogram were obtained in five instances (30 per cent.); the normal phenolsulphonephthalein excretion was obtained in four (23 per cent.), and there was a small hydronephrosis with fair function in three (18 per cent.). Functionless kidneys were found in five instances (30 per cent.). In a review of the histories in the cases of functionless kidneys, two conditions are noted:

1. Marked dilatation of the ureter at the time of the implantation, due to the growth overlying the meatus and causing gradual obstruction in one case (Case 10). In one case (Case 16), in which the right ureter opened into the urethra, there was a dilated ureter.

2. Because of the necessity of resecting a portion of the ureter involved in the malignant growths, where there was very dense scar tissue in ureteral fistulas, the implantation was performed with considerable tension on the ureter (Cases 12 and 15).

In nine cases (53 per cent.) of the seventeen patients, the function of the kidney was entirely normal. There was fair function in three cases (18 per cent.), and functionless kidneys in five cases (30 per cent.). If we deduct those cases in which marked dilatation was noted at the time of operation, and in which the ureters were implanted under tension, normal kidney function occurred in 75 per cent. and fair function in 25 per cent.

Of the four patients who died from the fourth day to the second month after the operation, two showed slight dilatation on the implanted side; in one the pelvis was dilated to three times the normal size, and in one there was no evidence of obstruction.

In view of the fact that functionless kidneys result when the implantations are done with widely dilated ureters, and when it is necessary to put the ureter on tension in order to accomplish the anastomosis, in such cases ligation of the ureter is preferable to implantation.

If, on cystoscopic examination, a tumor of the bladder, which appears malignant, is found overlying one or the other meatus, or in close proximity to it, the opposite ureter should be catheterized to ascertain the functional capacity of the kidney. If, at the time of the operation, a widely dilated ureter is found, or if tension is necessary, the surgeon has definite information regarding the ability of the opposite kidney to carry on the urinary elimination. If, on account of hematuria, spasm of the bladder, spasm or anatomic obstruction, the opposite ureter cannot be catheterized, a combined phenolsulphonephthalein test should be done. If the combined output is normal, or nearly normal, and a widely dilated ureter is found, it is safe to assume that the normal phenolsulphonephthalein output is from the opposite side, and ligation of the ureter may be safely done.

In all cases in which advanced pathologic changes of the kidney and ureter have not occurred prior to surgical relief, and in which tension can be avoided, the reimplantation of the ureter into the bladder should be done.

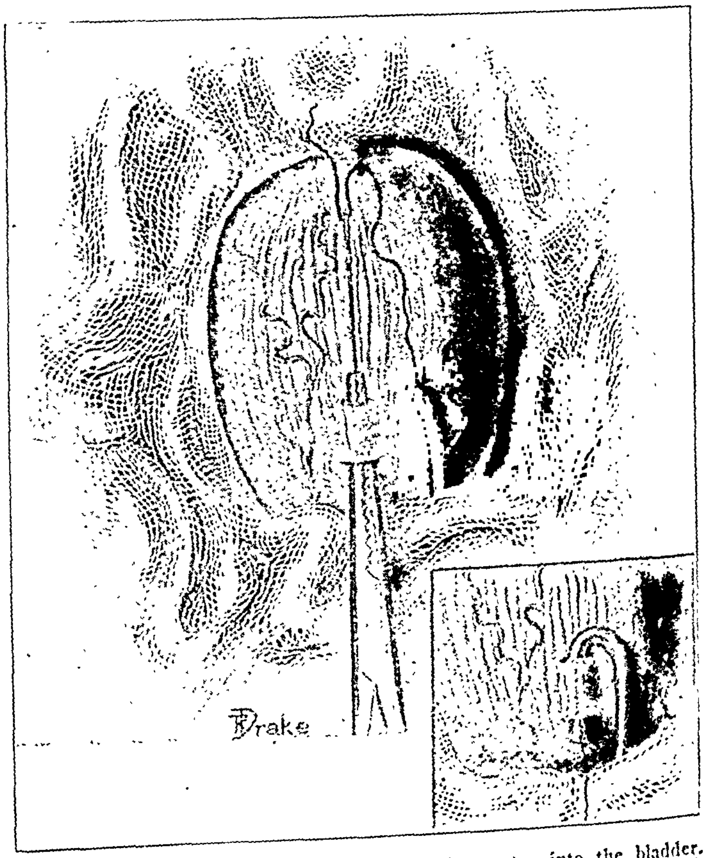

Fig. 7.—Mann's technic for implanting the ureter into the bladder. A seromuscular bridge is undermined and the ureter is pulled beneath this bridge from above downward.

CONCLUSIONS

1. From experimental and clinical observations, it is obvious that a normal or almost normal kidney and ureter should result following the implantation of the ureter into the bladder.

2. The utmost care to minimize the operative trauma must be observed.

3. The placing of a forceps over the end of the uterer should be avoided.

4. No suture should enter the wall or lumen of the uterer other than the anchoring suture placed in the split extremity of the ureter; and the approximation of the wall of the bladder must be accomplished without undue compression.

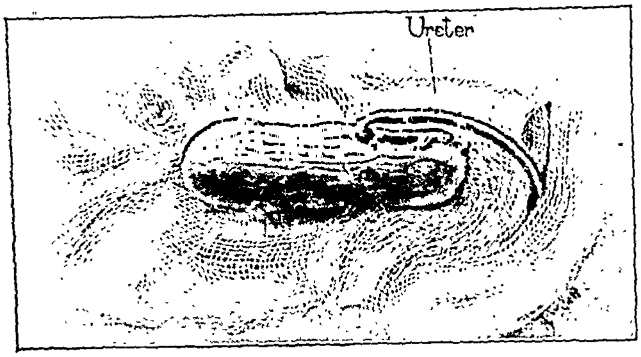

Fig. 8.—Mann's technic of implantation completed, showing the bladder empty and pulled well out of the abdomen.

5. When marked dilatation of the ureter has occurred prior to surgical interference, and when it is necessary to implant the ureter under tension, a successful result is very doubtful and ligation is preferable to any effort of implantation.

REPORT OF CASES

Case 1 (No. 80914).—A woman, aged 40, was admitted to the clinic, March 4, 1913. A diagnosis was made of a broad, flat carcinoma extending over the base of the bladder and into the urethra. Aug. 6, 1913, excision and cautery of the base of the tumor and implantation of the right ureter was done. The patient returned each year for cystoscopic examination. There was no recurrence except a persistent caruncle of the urethra, which was cauterized. Microscopic examination showed it to be inflammatory. Oct. 26, 1917, four and one-fourth years after the resection of the growth, the left ureter was catheterized. The differential functional phenolsulphonephthalein test showed 15 per cent. from the ureter, and 17.5 per cent. from the bladder specimen in fifteen minutes after intravenous injection. Nov. 30, 1917, the right ureter was catheterized easily, and clear urine flowed normally through the catheter. A pyelogram made on this date showed no dilatation of the pelvis (Fig. 23). The patient is in good general condition.

Case 2 (No. 86197).—A woman, aged 50, was admitted to the clinic, June 18, 1913. A diagnosis of malignant papilloma of the base of the bladder was made. June 25, 1913, suprapubic resection of the right quadrant and floor of the bladder with implantation of the right ureter was done. Cystoscopic examination in 1914, 1915, 1916, and 1917 showed no evidence of recurrence. Feb. 8, 1918, four years and seven and one-half months after the removal of the tumor, a dilated right meatus was found. The catheter could not be passed up the ureter. The left ureter was catheterized with a Garceau catheter. The intravenous phenolsulphonephthalein test showed 20 per cent. in the ureter, and 15 per cent. in the bladder in fifteen minutes. The patient's general health is good.

Case 3 (No. 100111).—A man, aged 53, was admitted to the clinic, Feb. 4, 1914. A suprapubic resection of a tumor of the bladder had been done elsewhere, about six months previous to admission. A recurring tumor of the bladder was found, and, Feb. 7, 1914, resection and cautery of one half of the bladder with implantation of the right ureter was done. Nov. 5, 1914, cautery of the bladder for recurrence was again necessary. Cystoscopic examinations in 1915, 1916 and 1917 showed a small recurring growth at the site of the operation scar, which was fulgurated. Examination, December 4, 1917, showed a small reddened area in the old scar but no evidence of recurrence. The right ureter opening was widely dilated, and frequent spurts of urine came from the meatus. The secretion from the right ureter showed a few pus cells. The phenolsulphonephthalein test showed 4 per cent. in the right ureter, and 5 per cent. in the left in fifteen minutes. A pyelogram of the right kidney showed a small hydronephrosis. The patient is now in excellent health (Fig. 24).

Case 4 (No. 163712).—A man, aged 69, was admitted to the clinic, June 23, 1916. A diagnosis was made of a papilloma of the bladder the size of a hen's egg, lying in the right base. July 11, 1916, excision of the tumor and implantation of the right ureter was done. Papillary epithelioma was diagnosed pathologically. A cystoscopic examination, Oct. 27, 1917, one year and three and one-half months after operation showed no recurrence. The catheter passed easily up the right ureter and negative urine was collected. Phenolsulphonephthalein output showed 15 per cent. in the right ureter, and 17.5 per cent, in the bladder. The pyelogram showed the right kidney to be normal. The general condition of the patient was good (Fig. 25).

Case 5 (No. 185582).—A woman, aged 60, was admitted to the clinic, Feb. 13, 1917, and a diagnosis of carcinoma of the bladder was made. March 21, 1917, a suprapubic excision of one third of the wall of the bladder was done. One inch of the right ureter was removed and the left ureter was implanted into the base of the bladder. It was not possible satisfactorily to reconstruct the bladder. The involved portion of the urethra was removed also. Jan. 22, 1918, ten months after the operation, there was no evidence of recurrence of the tumor. The left meatus could not be seen; the right was normal. A catheter was passed well up the right ureter. The phenolsulphonephthalein output showed 12 per cent. in the right ureter, and a trace in the bladder in fifteen minutes. The left kidney was found to be functionless probably because of the tension on the ureter necessary for its implantation.

Case 6 (No. 69825).—A man, aged 54, was admitted to the clinic, June 27, 1912. A carcinoma of the left base and wall of the bladder was found. July 6, 1912, suprapubic resection of one third of the bladder with cautery of the base, and implantation of the left ureter was done. Cystoscopic examination, March 8, 1913, showed no evidence of recurrence. The left meatus spurted urine normally. In answer to an inquiry in August, 1916, the patient stated that he was in good health and had no urinary inconvenience.

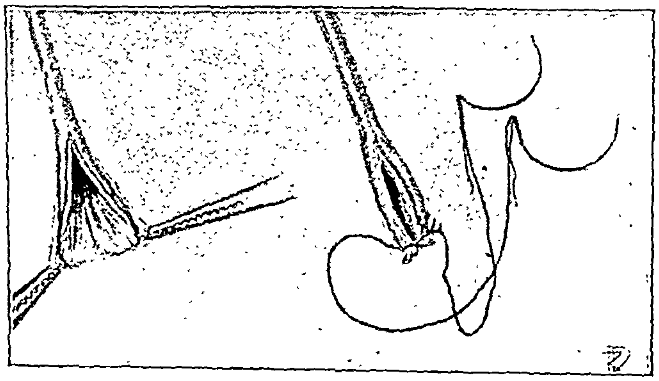

Fig. 9.—Preparation of the ureter for implantation into the bladder. Anterior wall split from one-fourth to one-half inch and anchoring sutures introduced.

Case 7 (No. 186610).—A man, aged 54, was admitted to the clinic, Feb. 23, 1917. March 9, 1917, a suprapubic resection of one third of the left wall of the bladder and one-half inch of the left ureter, with implantation of the ureter was done for carcinoma. Oct. 18, 1917, cystoscopic examination showed no recurrence. The left meatus was widely open and spurted urine normally. A catheter passed easily and the specimen of urine showed a few pus cells. Intravenous phenolsulphonephthalein appeared in four minutes, from the left ureter 4 per cent. and from the bladder 20 per cent. The catheter drained poorly. The pyelogram showed a normal kidney and ureter (Fig. 26). The patient's health is good.

Case 8 (No. 213632).—A man, aged 48, was admitted to the clinic, Nov. 20, 1917. A suprapubic excision with cautery was done at the base of the left wall of the bladder, and base of the left ureter for multiple papilloma. One large growth of the size of an orange was situated at the left meatus. Cystoscopic examination four months and twenty-two days after the operation showed no evidence of recurrence. The left meatus, which was located high up on the left wall of the bladder, was catheterized easily. Indigocarmin, dark blue in color, appeared in five minutes on both sides. The pyeloureterogram showed a normal pelvis and ureter throughout. Examination of urine from the left kidney was negative (Fig. 27). The patient has gained 8 pounds in weight and has no urinary inconvenience.

Case 9 (No. 213837.—A man, aged 42, was admitted to the clinic, Nov. 11, 1917. A diagnosis of a large tumor of the bladder and marked secondary anemia was made. The hemoglobin was 37 per cent. A transfusion of 500 c.c. of blood was given eleven days before operation. Nov. 24, 1917, a suprapubic resection of the left one third of the bladder, extending the dissection close to the right ureter, was done. The left ureter was implanted and a small rubber catheter was inserted into it for a short distance, and brought out through the suprapubic wound. March 22, 1918, four months after the operation, the patient returned for cystoscopic observation. There was no recurrence. The capacity of the bladder was 4 ounces. The left ureter had probably been implanted in the dome. It was gaping, and no excretion was seen. A catheter could not be passed. The right meatus, which was normal, was catheterized. Phenolsulphonephthalein showed 25 per cent. in the right ureter, and 2 per cent. in the bladder in fifteen minutes. The left kidney was functionless. The patient's general condition was much better. The hemoglobin was 58 per cent.

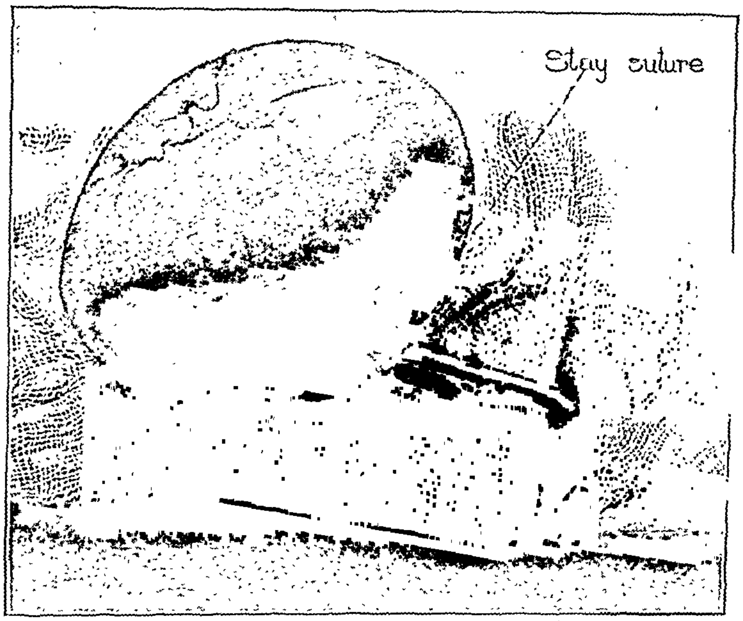

Fig. 10.—Showing tension of the stay suture when the bladder is distended.

Case 10 (No. 213710).—A man, aged 59, was admitted to the clinic, Nov. 13, 1917. November 24, resection of one third of the bladder, right wall and base, including two-thirds of an inch of the right ureter, with implantation of the right ureter was done. A small catheter was passed four inches up into the implanted ureter. The ureter was dilated considerably, apparently from obstruction, the result of the growth. Cystoscopic examination March 21, 1918, nearly four months after the resection, showed no recurrence. The right meatus was gaping. Contractions were absent and the left meatus was normal. Indigocarmin injected intravenously appeared from the left side in three minutes, dark blue in color. None was seen from the right meatus in fifteen minutes. The catheter could not be passed up the implanted ureter. The right kidney was functionless.

Case 11 (No. 204790).—A woman, aged 56, was admitted to the clinic, Aug. 15, 1917. The patient had complained of frequency of urination and hematuria for two months. Aug. 22, 1917, a suprapubic resection of one half the bladder and part of the vaginal wall with implantation of the left ureter was done. A diagnosis of epithelioma was made pathologically. Nov. 24, 1917, three months after the operation, there was no recurrence. The left meatus was not seen because of the deformity of the bladder. A Garceau catheter was passed into the right ureter. The phenolsulphonephthalein test showed 12.5 per cent. in the right ureter, and 17.5 per cent. in the bladder in fifteen minutes. The patient's general health is much improved.

Case 12 (No. 221950).—A woman, aged 33, was admitted to the clinic, Feb. 14, 1918. Following vaginal drainage for pelvic abscess, three years prior to admission, the patient developed incontinence. A left ureterovaginal fistula was found. Feb. 26, 1918, the lower eight inches of the left ureter was dissected out of very dense scar tissue and was reimplanted under tension. A small catheter was introduced into the implanted ureter and brought out through the urethra. A cystoscopic examination a month later showed granulation tissue in the left dome. No spurts of urine were seen from the left side. A Garceau catheter was passed into the right ureter, and the differential functional test showed 20 per cent. in the right ureter, and none in the bladder. The left kidney was functionless because of cicatricial contraction at the lower end of the left ureter.

Case 13 (No. 214196).—A woman, aged 23, was admitted to the clinic, Nov. 17, 1917. Following instrumental delivery fourteen months previously, the patient had developed incontinence. A diagnosis of left ureterovaginal fistula and right uretero-uterine fistula was made. The left ureter was implanted, Dec. 3, 1917, and the right was implanted, Dec. 22, 1917. A cystoscopic examination seven weeks after the first operation showed the left meatus to be normal. Indigocarmin appeared in five minutes, dark blue in color. A No. 6 catheter was passed easily. The pyelogram showed normal outline. A specimen of the urine contained a large number of pus cells. Inflammatory reaction obscured the right meatus. There was a small uretero-abdominal postoperative fistula on the right (Fig. 28).

Case 14 (No. 102891).—A woman, aged 41, was admitted to the clinic, March 24, 1914. The patient had developed a left ureterovaginal fistula following operation for cancer of the uterus five months previously. An implantation of the left ureter was done, April 7, 1914. Eighteen days later, a ureteral catheter was passed easily, and cloudy urine, showing numerous pus cells, flowed rapidly for twenty minutes. Two ounces of urine were withdrawn, the specific gravity being 1.001. Before implantation could be accomplished, the lower end of the ureter had to be dissected out of dense scar tissue.

Case 15 (No. 144658).—A woman, aged 42, was admitted to the clinic, Oct. 30, 1915. The patient had developed a right ureterovaginal fistula following hysterectomy done at the clinic. March 15, 1916, the right ureter was dissected free from the scar tissue and implanted into the bladder. A cystoscopic examination twenty days after the operation showed the end of the right ureter protruding into the bladder. It was not possible to catheterize on account of the obstruction. The left kidney was catheterized, and the differential functional test showed 13 per cent. in the left ureter, and 2 per cent. in the bladder in thirty minutes.

Case 16 (No. 163923).—A woman, aged 21, was admitted to the clinic, June 27, 1916. The patient had suffered from incontinence since childhood. The right ureter was found opening into the urethra. Implantation of a widely dilated right ureter was done, April 25, 1917. The cystoscopic examination four months later showed an infected hydronephrosis containing more than 2 ounces of cloudy urine. The phenolsulphonephthalein output showed 15 per cent. in the right ureter and 30 per cent. in the bladder in fifteen minutes.

Case 17 (No. 215976).—A man, aged 32, was admitted to the clinic, Dec. 7, 1917. An operation for diverticulum of the bladder was done, Feb. 26, 1918. The left ureter was found opening into this pouch and was transplanted. On cystoscopic examination six weeks later, it was impossible to get a satisfactory view of the transplanted meatus. A No. 6 catheter was passed into the right ureter and a differential functional test done which showed 25 per cent. from the right ureter, and 12 per cent. from the bladder.

Case 18 (No. 210877).—A man, aged 54, was admitted to the clinic, Oct. 15, 1917. Nov. 16, 1917, a suprapubic resection of one half of the bladder with implantation of the left ureter was done for cancer. The patient died in the hospital on the fourth day after the operation. Necropsy showed advanced myocardial changes and pulmonary edema. There were multiple small cortical abscesses in the left kidney and a slight hydronephrosis. The ureter was contracted at the site of the anastomosis and was dilated above this point (Fig. 29).

Case 19 (No. 218877).—A man, aged 60, was admitted to the clinic, Jan. 12, 1918. Jan. 19, 1918, a suprapubic resection of the bladder and one and one-half inches of the right ureter, with reimplantation into the dome of the remaining portion of the bladder, was done for extensive cancer. A small catheter was passed into the implanted ureter and brought out through the suprapubic wound. The patient died on the twelfth day from bilateral pulmonary emboli. There was no obstruction at the site of implantation. Both kidneys showed arteriosclerotic changes with slight dilatation of the right kidney pelvis (Fig. 30).

Case 20 (No 101710).—A man, aged 45, was admitted to the clinic, Mar. 11, 1914. A part of the right wall and base of the bladder was excised, Dec. 14, 1917, with implantation of the right ureter into the base, for early epithelioma of the bladder. A small catheter was passed into the implanted ureter. The convalescence was uneventful for one month, when abdominal distention and coma developed, and the patient died. Necropsy showed a general peritonitis, with firm union of the implanted ureter and an old perivesical hematoma near the site of implantation (Fig 31).

Case 21 (No. 219087).—A man, aged 40, was admitted to the clinic, Jan. 14, 1918. Jan. 22, 1918, a resection of the base and the right one half of the bladder, with transplantation of the right ureter into the dome was done for extensive cancer. The ureter was dilated to the size of a finger. A catheter was passed into the ureter. The cancer had extended into the perivesical fat. The patient died two months after the operation. Necropsy showed a large bilateral psoas abscess, extensive metastasis to the liver, and carcinomatous extension into the perivesical area with marked sloughing of tissues. The site of anastomosis could not be made out, on account of the necrosis of the bladder, and the surrounding infiltration. There was marked bilateral dilatation of the ureters and kidneys (Fig. 32).

ABSTRACT OF DISCUSSION

Dr. V. D. Lespinasse, Chicago: The specimen that interested me most was the one which showed a dilatation of the ureter without dilatation of the kidney pelvis. In my work with dilatation of the ureter for the removal of stone, we found that when the ureter is obstructed a dilatation begins at that point and travels toward the kidney pelvis. These specimens show this phenomenon beautifully, and one in particular with a slight cicatricial contraction and consequent partial obstruction shows the dilatation progressing up to the kidney. The dilatation had just started to involve the kidney when the animal was sacrificed.

Dr. Arthur L. Chute, Boston: I would like to call attention to two things. One is a sort of rough and ready method of replanting or transplanting the ureter which I have used in quite a number of dogs. I introduce from below in either a man or a woman a long uro-catheter of size 12, making a little hole in the bladder anywhere that I can do it, and after I have slipped the ureter up 3 or 4 c.c., I then push the whole thing back into the bladder, and insert one or two stay sutures wherever I can get them. While it is not a very attractive technic it brings the result. I have not had any opportunity of catheterizing human ureters in that way, but on dogs it seems to be a very feasible method. At the same time, with a retention catheter you keep the bladder open and prevent the possibility of pulling out, while it does not add very much to the extent of the operation.

Dr. Charles M. McKenna, Chicago: I can see from Dr. Peterson's slides that surgical repair is the important point which he intended to bring out. Too much cannot be said about surgical repair, either in genito-urinary surgery, or in general surgery. I do not quite understand why Dr. Peterson makes a second incision in the bladder to do the transplant. I should like to ask Dr. Peterson why it is not a good plan to transplant the ureter in the upper angle of the original incision. There will be less scar tissue to deal with there than there will by making a new opening, and less danger of infection since you have only one incision. I have used this latter method in my own cases and am satisfied with the result.

Dr. Bernard Erdman, Indianapolis: What method of transplantation was used in the case of the bladder with one ureter, and one ureter transplanted into the bowel?

Dr. Anders Peterson: The Coffey technic was used for the bowel implantation and the Stiles technic for the implantation into the bladder.

Dr. F. C. Herrick, Cleveland: I think in the anastomoses which possibly may be in question, and also in preventing possible stricture from the swelling, a catheter is of very great value to be left in for from five to eight days—possibly seven days—and then bring it out. It comes out very readily, of course. Some use a solid bougie.

Dr. Anders Peterson, Rochester, Minn.: Dr. Chute has repeatedly placed in the ureters a small rubber catheter large enough to completely fill the ureter. It is brought out through the suprapubic wound that is used as drainage after the section, and drains the urine quite freely. We believe it is a good thing to do; but in animal experiments, of course, it is not feasible, and it does not seem to be necessary, since results may be obtained by careful methods of suturing. In man there is danger of stricture.

In answer to Dr. McKenna's question in regard to making the anastomosis in the upper angle of the incision. This can, and very often has been done. In operating on the bladder large resections have to be made. The method used is not of such great importance, but all efforts must be made not to damage the upper section of the ureter which you are going to use. The ureter does not stand manipulation. If that is borne in mind, I believe results may be obtained without catheters.

Pellagra.—Figures covering the death rate for pellagra in the United States among the policy holders of the Metropolitan Life Insurance Company showed a gratifying decrease during 1916. In 1911, according to a bulletin issued by the company, there were 277 deaths among its policyholders from pellagra; in 1915 the number had increased to 650, and the rate had increased from 3.6 per hundred thousand exposed persons to 6.7. In 1916 the deaths fell to 368, and the rate to 3.6 as in 1911, a drop of 46 per cent. in 1916 as compared with 1915. This drop was observed in many districts of the South where the company does business. It is suggested that the drop in the death rate from this disease coinciding with the greater prosperity of the agricultural portion of the South during the high prices incident to the war in a way confirms the tentative conclusion of some of the government experts that pellagra is a "deficiency" disease induced by insufficient, poorly balanced dietaries rather than an infectious disease. The statistics of the company further show that the disease is more prevalent among the colored than the white people, and more frequent in women than in men. It is also indicated that the incidence of the disease increases with age.

THE END-RESULTS OF OPERATIONS FOR CANCER OF THE RECTUM

WITH SUGGESTIONS FOR IMPROVING THEM *

J. RAWSON PENNINGTON, M.D.
CHICAGO

The sole plan at present which offers any hope of cure of cancer, though often only temporary, is the knife.

Radium is of little avail in columnar-celled growths, that variety of malignant disease which principally affects the lower bowel. Morson[1] states that while we may expect retardation of the neoplasm and relief of pain, irradiation is often followed by fibrous stricture, especially if the exposure has been for more than twenty hours, and he strongly advocates colostomy before treatment with radium is carried out.

In 1913, 1914 and 1915, of fifty-one patients treated at the Radium Institute,[2] London, thirty-three improved, ten did not, and eight died; while fourteen more abandoned treatment, probably on account of not obtaining any relief. The latest results were not very brilliant either. In 1917, they "were not constant or uniform, but in some instances growths regarded as inoperable were so much improved . . . that they were removed and the patients remained free from recurrence. This, however, has not frequently happened, and in the majority of cases the most that can be hoped for is healing of ulceration, diminution of the rate of growing, checking of the hemorrhage and postponement of the date at which colostomy becomes imperative." In fairness, though, it must be stated that it is a rigid rule there to treat inoperable cases only, or cases in which the patients absolutely refuse intervention.

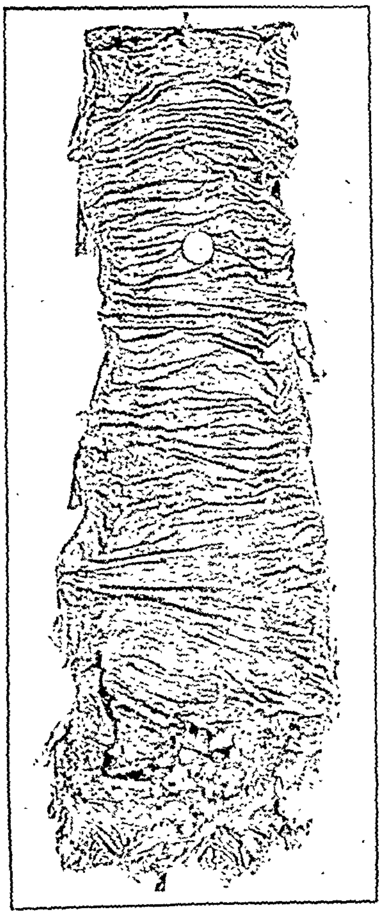

Fig. 1.—Photograph of specimen removed by author. Cancer mass in anorectal region. Circular dot shows metastatic lymph node 10½ inches above anus.

At the Manchester Radium Institute, Burrows and Luyton[3] also found: "The improvement in cancer of the rectum was merely temporary."

On the other hand, Janeway[4] states that both the anal as well as the rectal carcinomas, especially the latter, have shown a marked susceptibility to radioactivity. This statement is based on very insufficient evidence, it seems to me, for of thirty-four patients treated, two at the time of report showed no evidence of the disease, fourteen were improved and eighteen were unimproved.

OPERABLE AND INOPERABLE CASES, AND MORTALITY

The operative mortality is high. As a rule, when patients are first seen, the disease is so far advanced that extensive dissections are necessary. Hence there is considerable shock. Another important factor is sepsis; and Mayo places it at 39.8 per cent. Mummery[5] of London, however, believes that with careful technic this should be avoided, and states he lost but one case in the previous three years, though but a year or so before he gave as his opinion that 90 per cent. of deaths following excision of the rectum "are due directly or indirectly to sepsis."

Hartmann[6] collected for the "low" operation (that is, the perineal and sacral methods) statistics from seventeen clinics besides his own, a total of 1,665 operations with 264 deaths, or 15.8 per cent. In addition to his figures (260 cases) for the combined operation, I have gathered enough to bring the total up to 320 operations, with 129 deaths. While a few cases from the Mayo Clinic are included in the series, we learn from more recent papers by W. J. Mayo,[7] that the total is now much larger. Up to Dec. 31, 1915, of 753 patients, radical operation was done in 430 cases, with an operative mortality of 15.5 per cent. Before 1910 it was 17.8, and remained about the same, 17 per cent., for the next three years, but for the period from 1913 to 1915, it was reduced to 12.5 per cent.—a splendid showing. Within the last few weeks, Lynch[8] informs us that the mortality for his and Tuttle's cases was 16 per cent.

The proportion of cases judged suitable for operation, the operability in other words, has been steadily rising in that great center of surgical activity, the Mayo Clinic. From 1910 to 1913, it was 51 per cent., and in the period from 1913 to 1915 it was raised to 71.8, though, as just stated, the operative mortality fell from 17.8 to 12.5 per cent. Even so experienced a surgeon in rectal surgery as Mr. Cripps[9] performed excision in only 108 cases of 445, or 25 per cent., 151 patients being subjected to colostomy, and 115 to palliative operations. In Tuttle and Lynch's experience during nineteen years, 153 out of 491 cases were deemed inoperable.

Extension of the cancerous process to the contiguous structures was, until recently, held to place the case in the inoperable class, but this no longer holds good for the Mayos. In six cases total hysterectomy was performed. In six more, a part of the posterior vesical wall was resected. The similar wall of the vagina was removed in twelve, and the whole of the prostate, or part only, with one or both seminal vesicles was removed in two, while on five occasions, one or more loops of small bowel as well were resected. As long ago as 1905, Mackenrodt[10] showed that the parametrium and vagina are often invaded, and he excised them with the uterus itself, when necessary.

Not long ago, a three-year survival following operation for malignant disease was looked on as a suc-

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* Read before the Section on Gastro-Enterology and Proctology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918

[1] Morson, A. C.: Brit. Jour. Surg., 1914-1915, **2**, 354-363.

[2] Radium Institute of London, Annual Reports, 1913-1917.

[3] Burrows and Luyton: Arch. Radiol. and Electrotherap., 1917.

[4] Janeway, H. H.: Radium Therapy in Cancer, New York, 1917.

[5] Mummery, P. L.: Lancet, London, 1911, **2**, 1821; Ibid., 1913, **1**, 719.

[6] Hartmann, Henri: Presse méd., 1909, **17**, 929; Jour. de chir., 1913, **11**, 693.

[7] Mayo, W. J.: Ann. Surg., 1916, **64**, 304.

[8] Lynch, J. M.: Ann. Surg., 1918, **67**, 504.

[9] Cripps, Harrison: Brit. Med. Jour., 1912, **2**, 843.

[10] Mackenrodt, W.: Ztschr. f. Geburtsh. u. Gynäk., 1905, **54**, 514.

cessful result. Of course, this is no longer deemed a "cure," and even the three-year survivals in cancer of the rectum are not especially notable from a numerical standpoint. I have collected 966 records of operations, 218 of these being three-year survivals. In addition to those of Tuttle and Lynch, they are from the clinics of Roux,[11] Kocher,[12] von Eiselsberg,[13] and Hochenegg respectively. At the Mayo Clinic, of 364 patients, 37.8 per cent. lived three years or more, and 35.8 per cent., five years or more.

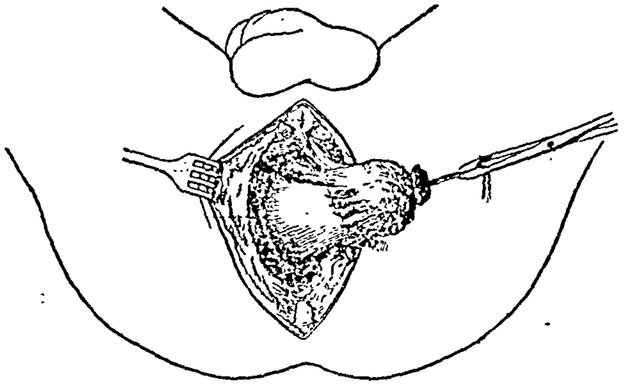

Fig. 2.—Removal of rectum by perineal route, showing impossibility of getting high enough up to reach lymph nodes (Quénu and Hartmann). The middle fasciculi of the levator have been divided, exposing the lateral surface of rectum, and in front the anterior fasciculi of the levator.

TYPE OF OPERATIONS

The perineal operation of Lisfranc (1826) now nearly a century old, strange as it may seem, occasionally furnished results as good as those obtained by more extensive procedures. Thus the late Mr. Dent[14] of London, Nov. 9, 1882, operated on a man, aged 52, by the perineal route. The nodes were removed from the ischiorectal fossa, the anus being left. The bowel could not be pulled down. As a result, there was good control of solid feces and partial of fluid feces. Jan. 29, 1904, the man was readmitted. The anus, which appeared perfectly healthy, was represented by a funnel-shaped depression. The point of union of the divided intestine was a sphincter-like constriction which admitted the index rather easily. Evidences were present of metastases to the liver, and the patient died, April 25.

Of fifty-eight operations done by Miles[15] there was recurrence in fifty-five, and other things being equal, this route should be restricted for epitheliomas limited to the anal region.

Notwithstanding the unfavorable opinion respecting it entertained by many authors, Kraske's plan of sacral resection, judging by the figures from Hochenegg's clinic furnished by Bacharach,[16] gives good results, namely, about 320 operations, with an operative mortality of 13.7 per cent. In 1,244 cases collected by Lusk[17] from fourteen different continental clinics, the operative mortality varied from 6.4 (Poppert) to 32 per cent. (von Bergmann, Schede and Rotter, respectively).

Nevertheless, the method of choice is the combined or abdominoperineal route, which alone affords free access and enables the surgeon to go well beyond the tumor mass, excising it with any extension to the regional nodes, and allowing the arteries to be ligated at a point where there is no danger of gangrene.

In regard to metastases, in the enormous number of necropsies on carcinoma in various parts of the body tabulated by the lamented Murphy,[18] that is, 10,310, nearly 20 per cent. (or 19.7 to be exact) had no metastases. The proportion for the rectum separately was about the same (22.2 per cent). This accords with the usual experience that the types of cancer involving the rectum and anus — squamous and columnar-celled—frequently end fatally without any evidence of metastatic deposits.

Last year, Symmers[19] studied a series of 298 metastases found in 5,155 necropsies at Bellevue Hospital in a decade, and observed that of the twenty-eight examples of carcinoma in the lower intestinal tract, no less than 15, or 53.5 per cent., were free from secondary growths. A striking contrast to the high degree of malignancy attending tumors of the upper bowel and stomach.

I have collected 997 necropsies on cancer of the rectum, and in about one third (324 cases) the regional nodes were affected. They would be beyond reach, as a rule, by the perineal or Kraske operations.

ABDOMINOPERINEAL OPERATION

To prevent cancerous material being forced into and along the lymphatics at the time of operation, it is a well recognized procedure in cancer of the mamma, for example, to begin the dissection from above and work down against the lymph current; and the same should hold good in excision of the rectum. Obviously this can be done only by the abdominoperineal route.

In regard to the distribution of the lymph vessels, for the present purpose and without going into detail this may be stated as ending in the inguinal nodes for the perianal collectors, and in the nodes of the mesosigmoid for the collectors from the rectum proper. Here again the latter would be out of reach in many instances if sought for by the "low" operation.

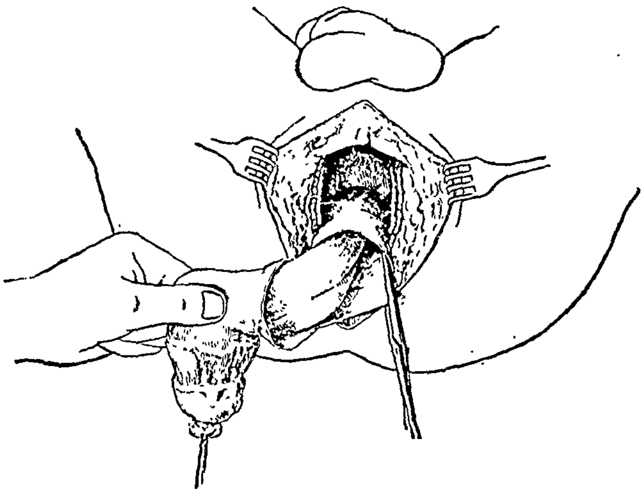

Fig. 3.—Same as Figure 2 (Quénu and Hartmann). Between the forceps and the wall of the rectum, which has been pulled to the right, is seen the left layer of the mesosigmoid forming a triangle, the anterior base of which is a free border.

A frequent cause of death following operations by the perineal or sacral method is gangrene of the bowel, either partial or complete. This is due to the fact that the superior hemorrhoidal arteries are end-arteries as shown by Sudeck[20] in 1907 and corroborated by Hartmann[6] in 1909. The "critical point" of the former is at the junction of the superior hemorrhoidal with the lowest large anastomotic branch. When ligation is performed below this point, gangrene will probably follow, since the bowel does not receive adequate nourishment. Moreover, to get sufficiently high up to deal with this junction, one must go in from above. Hence, Sudeck suggested an intervention in two stages: 1. Through a laparotomy incision, the superior hemorrhoidal is ligated high up, and at the same time the bowel is partially loosened. Then, 2, the resection is completed by way of the perineum.

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[11] Vuichoud, R. (Roux's Clinic): Thèse de Lausanne. quoted in Jour. de chir., May, 1914, p. 649.

[12] DuPan, Martin (Kocher's Clinic): Rev. de chir., July, August, September, October, 1906, pp. 135, 258, 405, 489.

[13] Korbl, H. (von Eiselsberg's Clinic): Arch. f. klin. Chir., 1913, **101**, 449.

[14] Dent, C. T.: Lancet, London, 1904, **2**, 596.

[15] Miles, W. E.: Glasgow Med. Jour., 1912, **77**, 81.

[16] Bacharach: Jour. de chir., October, 1908 (Appendix, p. 21).

[17] Lusk, W. C.: Surg., Gynec. and Obst., 1908, **7**, 119.

[18] Murphy, J. B.: General Surgery (Practical Medicine Series), Chicago, 1916, p. 169.

[19] Symmers, Douglas: Am. Jour. Med. Sc., 1917, **154**, 225.

On two occasions, Hartmann, after bringing the bowel down through a perineal operation, found that gangrene had ensued; and in several others, while there was an apparently perfect operative cure, recurrence took place in the pelvic cellular tissue, although the mucosa itself remained free. Both the former instances concerned patients in whom it was necessary to divide the hemorrhoidal vessels rather high up, either because the carcinoma involved the upper ampulla, or because the tumor, though low down, had infiltrated the mesosigmoid. In such cases, he observed, once the rectovesical pouch is opened, it is not rare to find the rectosigmoid junction presenting and easily pulled down, while the rectum itself, and particularly its ampulla, remains fixed, held solidly by the superior hemorrhoidal arteries, which come down from the aorta almost in a straight line. Therefore these vessels must be divided in order to bring the rectum down, and while this enables the bowel to be pulled out, gangrene is apt to follow. This complication is readily understood by a study of the vascular relations. In other portions of the bowel, the arterial supply is by a series of anastomosing arches, while in the terminal portion, the hemorrhoidal arteries descend without giving off any anastomoses.

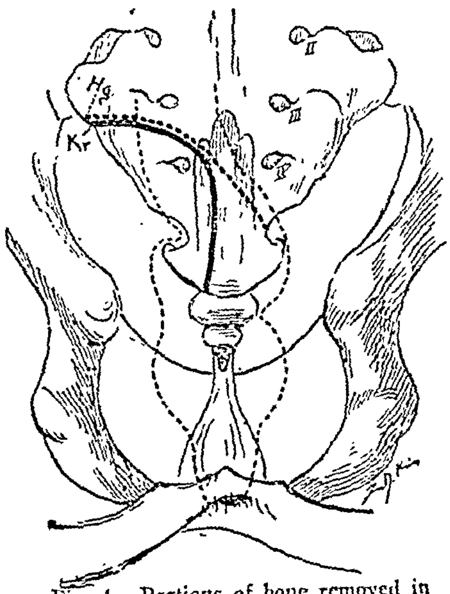

Fig. 4.—Portions of bone removed in Kraske method; also showing impossibility of getting high enough up to reach nodes (Quénu and Hartmann). Continuous line, Kraske's line for dividing bone; dotted line, Hochenegg's line.

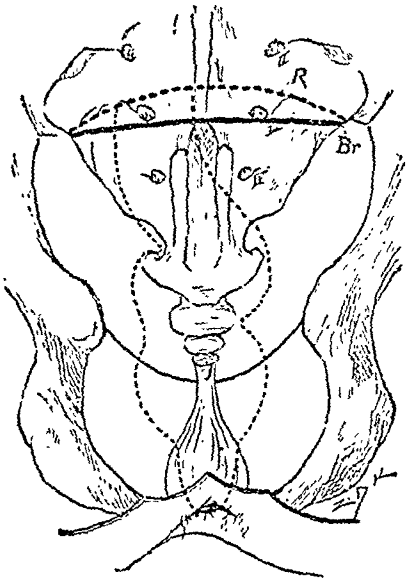

Fig. 5.—Same as Figure 4 (Quénu and Hartmann). Continuous line, Bardenheuer's line for dividing bone; dotted line, Rose's line.

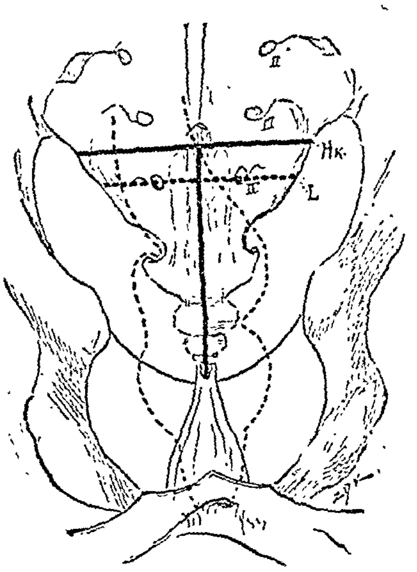

Fig. 6.—Same as Figures 4 and 5 (Quénu and Hartmann). Continuous line, Heinecke's line for dividing bone; dotted line, Levy's line.

This arrangement is shown by a series of injections carried out by de Dieterichs under Hartmann's direction. The former found: 1. Ligation of the inferior mesenteric had no effect on the circulation of the rectum, provided it was done between its origin and the last important collateral, which comes off two-fifths or three-fifths inch below the sacral promontory. 2. Ligation of the inferior mesenteric below this lowest collateral leads to almost complete suppression of the blood supply to the rectum and to the rectosigmoid junction. This suppression is all the more complete in that, during perineal amputation, the inferior portion of the bowel, being isolated from its peripheral connections, the branches of the middle hemorrhoidal as well are severed. 3. Ligation of the superior hemorrhoidal, right and left, shuts off the circulation in the corresponding sides of the bowel. After ligating above the last anastomotic arch, it is important to tie both ends of the vessel. By neglecting this precaution, Hartmann lost a case from hemorrhage at the lower end.

Hartmann's experience leads him to corroborate Sudeck's advice to perform a two-stage operation. In the first, in addition to ligating the vessels, one is able to clean out the presacral tissues, lymph nodes, etc., which may be invaded by the cancerous process. The second stage is excision through the perineum.

It seems to me no better argument for the combined operation may be made than the two cases referred to by Cole[21]: In one there was a deposit in the pericolic connective tissues 3 inches above the margin of the rectal growth, and he points out that if the latter had been excised together with one inch of normal bowel above, the line of incision would have passed close to the other deposit. In the other, a malignant ulcer was present on the posterior wall, and though small (0.75 inch wide), microscopic examination showed it had involved the whole thickness of the wall and spread freely into the connective tissue and nodes of the mesocolon.

Another argument for the abdominoperineal method is that the growth in the rectum may be secondary to one higher up, and the latter escape detection. Cole also narrates an example of this. At a laparotomy, the pelvic colon was found adherent to the anterior wall of the rectum at the bottom of Douglas'

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20. Sudeck, P.: München. med. Wchnschr., 1907, 54, 1314.

culdesac. It was thought unsafe to separate the uterus, so this organ as well was removed. Some 12 inches of bowel were excised and two growths found present, though only one had been diagnosed; both were in the bowel wall at the site of adhesions. The upper in the pelvic colon, of the whipcord type, had completely encircled the intestine, producing the symptoms of obstruction for which the patient sought advice. The lower growth in the rectum was a carcinomatous ulcer, affecting the anterior and left lateral walls. Cole found it difficult to escape the conclusion that the upper mass was the older, and that the lower one arose from contact.

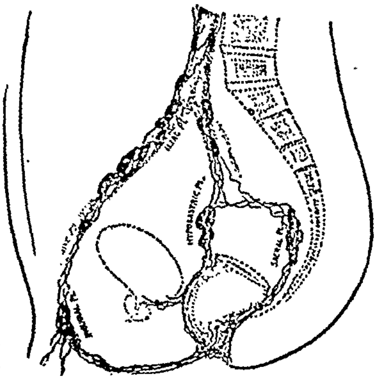

Fig. 7.—Lymphatics of rectum (Barnes). The lymphatics, as a rule, flow in the direction of the blood vessels. An exception is found in the lymphatics around the anus, which flow into the inguinal nodes.

Another reason for adopting the combined method is that the growth in the rectum may be secondary to one higher up, a "graft," in other words. This variety generally follows a tumor in the stomach, though it may also be due to one in the ovary, gallbladder, or the intestines, especially the larger one (Oehler[22]). Out of 463 cases, secondary nodules were found in the rectum in fifteen. In six isolated nodules above the growth, five below the mass, and in four multiple secondary nodules (Colwell and Woodman[23]) were found. Laparotomy allows search for the other one to be made.

Attention may be here drawn to some interesting findings some years ago, of Ryall[24] and Moullin.[25] The former, who is surgeon to the London Cancer Hospital, reported twenty-five examples of what he calls "infection" of operative scars after cancer operations; these involved all parts of the body. I have time, however, to quote only one or two:

> In a woman, aged 32, an exploratory operation was done for cancer of the upper rectum, which proved inoperable. Some time later she was readmitted and colostomy done. At this time, it was noted that a series of nodules were present in the laparotomy scar, and they all appeared to have arisen in the site of the sutures. A similar case is narrated in a woman, aged 26, with cancer of the sigmoid.

Ryall states:

> Cancerous infection of wounds during operation is a real and exceedingly grave danger, and one which I regard of the utmost importance. Moreover, it is a danger that cannot be too carefully guarded against, and any failure to avoid it has an important bearing on cancer recurrence.

The following year, Moullin recorded a most interesting case from this standpoint:

> In a man, aged 48, at operation for pyloric cancer, some disseminated nodules were found scattered over the gastric serosa. Gastro-enterostomy was done. Six months later, there was a double row of cancer nodules on either side of the laparotomy wound. Two rows of sutures had been inserted, one interrupted, of stout catgut, passing through all the layers of the wall, except the skin; the other continuous, of fine gut, through skin only. Practically all the former points, though none of the continuous ones, were infected. It was evident cancer cells from the peritoneal cavity had invaded the wall wherever the parietal peritoneum had been pierced by a suture. The stitches had not carried the cancer germs in, for they had never been near the growth. But either by perforating the serous layer or by acting as irritants, they had helped the development of the invading germs to such an extent that each suture point had become a cancerous nodule. The immediate source of the infection, Moullin thought, was in all probability the nodules on the serosa, which were constantly rubbing against the anterior wall. The line of the laparotomy incision seemed intact between the two rows of nodules.

The same explanation holds good for cases in which cancer recurs at suture points in cancer of the mamma. Moullin points out that the cancer germs are not carried in by the needle or suture, but they are more widely distributed in the surrounding tissues than is apparent at the time, and only develop or perhaps develop first at those points where the resistance of the tissues is lowered by the presence of an irritant, such as a suture.

If, as our author believes, the germs are more widely distributed than seems to be the case, is not this additional argument for a wide excision, which can best be done with a free exposure of the parts, such as is only to be had by abdominal section?

CONCLUSION

I would repeat the suggestion I made several years ago, in a paper read before the American Proctologic Society,[26] which I believe still holds good. First of all, every person who has reached the so-called "cancerous age" should be examined periodically for evidence of commencing carcinoma, not necessarily of the rectum alone, but, in women for example, of the uterus and mamma also. Neither the patient nor the practitioner should allow his interest in these periodic examinations to slacken. In my paper, I refer to an instance in which such examinations were made at regular intervals after excision of a mammary carcinoma, and eighteen years elapsed before the search was rewarded by discovery of a recurrence in the scar.

The responsibility of the family physician is great, for he is usually the first one to be consulted. He must not content himself with a perfunctory diagnosis of "piles" without even inspecting the the anal region, and an equally perfunctory prescription of ointments.

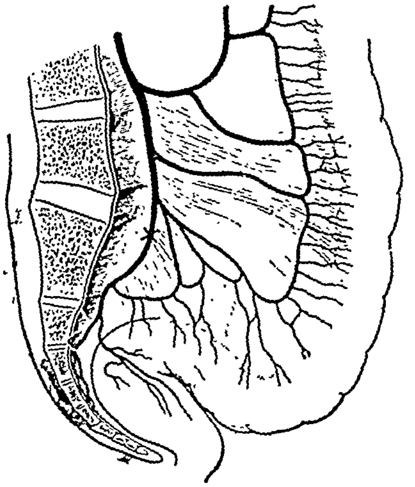

Fig. 8.—Blood supply of the mesosigmoid (Hartmann). The cross shows the location of the "critical point."

Jones[27] states that of the patients entering the Massachusetts General Hospital with cancer of the rectum, 75 per cent. had been treated for a longer or shorter time for "hemorrhoid," and the remainder for

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[22] Oehler, J.: Beitr. z. klin. Chir., 1913, 87, 593.
[23] Colwell and Woodman: Arch. Middlesex Hosp., 1905, 56, 141.
[24] Ryall, Charles: Lancet, London, 1907, 2, 1311.
[25] Moullin C. W. M.: Lancet, London, 1908, 1, 285.

[26] Pennington, J. R.: Tr. Am. Proctol. Soc., 1908, p. 101.
[27] Jones, D. F.: A Two-Stage Combined Abdominal-Sacral Operation for Carcinoma of the Rectum, THE JOURNAL A. M. A., Aug. 23, 1915, p. 757.

"diarrhea." Instead, the bowel must be inspected through the proctoscope. This calls for possession of the necessary armamentarium, and in turn the skill to interpret appearances visible through the instrument. In case of doubt, life should not be jeopardized by a procrastinating policy, but advantage taken of consultation with the specialist.

It has been shown of late years that a large proportion of malignant growths originate in scar tissue. Patients with rectal cancer often give a history of previous operations on the bowel. Does the cancer occur in the cicatricial tissue left from an operation done by one of the usual methods—ligature, clamp and cautery, or some other technic leaving much scar tissue, and sometimes stricture? May it not be occasionally grafted on the scar remaining after the common incision plan of operating for fistula? I have recently had such a case. All proctologists have seen large and ugly scars from time to time following this method. Here is a suggestion to be followed: Secure smooth healing by resorting only to such procedures as leave a minimum of cicatricial tissue, and consequently the least possible nidus for future mischief.

ABSTRACT OF DISCCUSSION

Dr. Dwight Henderson Murray, Syracuse, N. Y.: I hope that when Dr. Pennington sums up he will tell us what determines the operability of a cancer, and at what point in the life of it, or what part of the extension of it. In my opinion, it is very difficult, even with the microscope and a good pathologist, to tell just where cancer tissue ends and normal tissue begins. Even beyond the point in the tissues where the microscope shows that changes have taken place, the tissues have really changed, and the microscope will not show it. My own experience forces me to the conclusion that in the majority of rectal cancer patients, if we will do a colostomy it will be a greater kindness to the patient than to try to extirpate the cancer by operation. The majority of these patients will live about as long as the operated ones.

Dr. William M. Beach, Pittsburgh: It is exceedingly hard to believe many of the reports of end results in cancer of the rectum. The end results of my cases, and I have had over a hundred in the last ten years, is death. In the cases in which I operated, the longest period of life following operation was three years; and yet, while I am rather pessimistic of end results, I feel that there are certain cases in which we should intervene operatively. Now what are one or two of the signs that will lead us to select a case for operation? One is the hemoglobin percentage. If the patient has 45 or 50 per cent. hemoglobin, do not operate; if the hemoglobin percentage is nearly normal, 70 or 80 per cent., it offers a fair chance of success. The next point that will guide us in the selection of an operative case is the location of the neoplasm. If it is located low down, it offers the best chance for operation; if it is located in the loop of the sigmoid, it offers a fair chance. In operating in such a case we should resort to anociassociation. Many of these patients die from shock. Anociassociation helps wonderfully in tiding the patient over the crisis of the operation. Cure of cancer of the rectum, as spoken of by men who report cures, I believe, is a relative term. Very often they do not state the length of time the patient lives. If there is no recurrence, say after a year, it is reported cured. A surgeon near my city reported a case of absolute cure of cancer of the rectum, and it was cited far and wide. The patient was said to have lived out his natural life. I asked the surgeon whether he was sure of his diagnosis and he admitted that he was not. I believe that it was a case of syphilitic stricture. So that in reporting these optimistic results, the diagnosis should be positive. I operate on some of these patients, for I believe that if you can give a patient one year or two years or three years of life, that is much more comfortable than if you do not intervene. I never cured a case, and I never heard of anybody else that did. I agree with Dr. Murray, that we should do the more rational thing, a colostomy, and then, if possible, apply radium. In a number of cases I tried following up a colostomy with radium. One patient is still living, after two years. He is not cured. Radium could readily be applied because the lumen of the rectum was not interfered with much. It was full of cancer nodules, and the radium is simply inhibiting the process of the growth. These patients are all anemic, and for that reason the powers of resistance are very low; hence a great deal of shock is connected with the operation.

Dr. Charles J. Drueck, Chicago: Dr. Pennington deserves a great deal of credit for teaching patients to come to us in the precancer stage, yet I have not seen any results from his efforts. Most all of these patients come when the cancer is well advanced. Such patients must have something done for them. In a case of almost complete obstruction, I made an abdominal anus, and the patient is still living, a year and a half or more after operation. He is in very good physical condition. Although these patients come to us when they are anemic, still, after the abdominal anus is made, it is sometimes surprising how they will rebound. They regain almost, if not quite, all their former vigor. In the second stage of the combined abdominoperineal operation, when we do the perineal work, I think we are inclined to be urged by the patient to do the perineal section too soon. I have one case in which the combined operation was done, and the patient is alive, without any recurrence, over two years after operation. If we can tide these patients over and not submit to the second stage of the operation until they have rebounded as much as they are going to, I think we can get better results from our perineal work.

Dr. George E. Pfahler, Philadelphia: It has been shown that you can get a great deal of information in diagnosis, actual demonstration of the disease and locating the extent of it, by a careful roentgen study. Dr. Pennington dismissed the subject of roentgen therapy and radium therapy by mere mention. Now he is probably justified in doing that if it is a question of replacing the operation by the roentgen therapy or radium therapy, but there is no reason why all three cannot be used, or why they should not be used in every case. Operate if you can. Do all you can by operation. Use radium locally, and use deep roentgen therapy through the whole field of glandular extension that is likely to be involved, and I am sure that you will improve the results. Statistically, no one can say just how much can be done, because there have not been a sufficient number of these cases treated. I have treated only a few, because only a few cases have been left to me for postoperative treatment. Why this is I do not know. Those that have been left have given encouraging results generally, and the patients that have been left to me for treatment are those far beyond any operation. While I have obtained some improvement, some palliation even, in those cases, I have never had a patient I considered well. I have seen many convincing results of the disappearance of recurrent cancer. If you will just combine this additional force to what you are doing by surgery, and then introduce radium against the growth, thoroughly filtered, especially by the nonmetallic substance, and then use crossfire deep roentgen therapy, I am sure you will accomplish more than in any other way.

Dr. J. Rawson Pennington, Chicago: Formerly I used the roentgen ray in the treatment of cancer of the rectum. For the first few days the patients seemed to be greatly benefited, but later the disease appeared to advance more rapidly than if I had not used it. However, our knowledge of this agent today is in advance of what it was years ago. Concerning Dr. Murray's query, I cited the statistics of the Mayo Clinic. Do not think I am overoptimistic about curing cancer of the rectum. I am not; but one thing is very certain —if in 22 per cent. of the cases of cancer of the rectum the tumor is a local disease, we should cure a larger percentage than we do. The method of procedure has much to do with the end results. Among the various operations for cancer of the rectum, the radical abdominoperineal operation with left inguinal colostomy is the one most likely to eradicate the disease. It cannot be denied that by this procedure the operator has the best opportunity to circumvent the disease, and is less likely to squeeze the infected material into the surrounding tissues.

Dr. Dwight Henderson Murray, Syracuse: Dr. Pennington did not answer my question. I want to know what the physical findings are, and what the condition of the parts is that will show when a case is operable, and when it is not. I do not care anything about the statistics. A certain number of patients are operated on and a certain number are not, but when you examine a case, on what do you base your decision of operability?

Dr. Pennington: That question is decided on the physical findings. If the patient is very anemic, past 70 years of age, has much albumin in the urine, nodules in the liver, and other evidences of metastases, or if the condition of his heart is such as to question the advisability of giving an anesthetic, advise against an operation. If his condition is good, he is under 70, with little or no albumin in the urine, no recognized evidences of general spread or glandular enlargement, and the condition of the heart fairly good, operate.

Dr. Murray: Suppose ten or even twenty out of a hundred get "well" for two or three years, as a result of operation, and that thirty out of a hundred die a year and a half or two years earlier because of the operation, what about that? How much is to be gained as the result of the operation?

Dr. Pennington: No man knows, nor can he foretell, the natural termination of human life.

TREATMENT OF COLON BACILLUS INFECTIONS OF KIDNEY AND BLADDER

BY SURGICAL MEASURES APPLIED TO THE ASCENDING COLON *

GRANVILLE MacGOWAN, M.D.
LOS ANGELES

My frequent observation has been that colon bacillus infections of the kidneys and the bladder persisting and unyielding to treatment are invariably due to colonic stasis of the fecal current. This interruption is usually in the cecum and is due to adhesions of this organ to the surrounding structures immobilizing it. From the chronic stasis thereby induced, a constant supply of colon bacilli enter the circulation through the lymphatics in the kidney capsule or by the blood stream and primarily infect the kidney pelves on their way out, if there is any interruption to the free exit of urine, either in the ureters, at the neck of the bladder, or in the urethra. Once the infection is established, it is practically incurable until a normal condition in the large intestine or one approximately normal is restored by surgical measures.

REPORT OF CASES

Case 1.—G. J., aged 46, railway engineer, Sept. 18, 1916, complained of prostatic trouble. Urine freshly passed into a sterile glass contained many motile bacilli and much pus. Material massaged from the prostate did not contain any pus or residual urine. The image of the bladder neck was normal. There were a few recent hemorrhagic spots on the superior bladder wall and two on the right lower wall, probably made by my assistant with the catheter. There was a mild cystitis of the bladder base. Polypi were visible in the posterior urethra. The patient gave a history of sexual strain. His condition was thought to be chargeable to these polypi, and they were removed in several sittings, with the electric cautery and silver nitrate fused on a probe. The bladder was irrigated daily with mixed potassium permanganate and silver nitrate solution. October 5, the urine having become clear, the patient went back to work, but on the 18th of the same month, he came again with his urine very cloudy with pus and colon bacilli, and complained of slight pain in the right costovertebral triangle. He was treated in the same manner until November 20, when the urine was again perfectly clear and the prostate normal. He was then sent away, but returned, Jan. 4, 1917, complaining of pain in both sides in the neighborhood of the kidneys and with the urine loaded with colon bacilli and containing many pus corpuscles. Cystoscopy was again performed and the right ureter catheterized. This urine contained many colon bacilli, no pus, a few blood corpuscles and many epithelial cells, both small and large, some with fatty degeneration. Six c.c. of thorium solution were introduced and a pyelogram taken which was negative as to stone or to deformity of the kidney pelvis. On the 7th, the urine was macroscopically clear, but on the 8th, after a long automobile ride, it contained much pus and clouds of colon bacilli. On the 27th, the urine was clear again, and as the patient was feeling excellent he was sent back to work. In the interval between January 4 and January 27, he had pelvic lavage and treatment for the bladder and prostate with all the usual means for combating colon bacilli, including vaccines and the various balsams. I determined that if the disease recurred I would examine the intestine by the roentgen ray. When the patient returned, February 27, this was done. The plates showed intestinal stasis about the appendix and cecum, and the screen showed this part of the intestine to be immovable, containing barium more than forty-eight hours after ingestion of the meal.

March 30, after the bowels had been well emptied with castor oil and black draft for several days, Dr. Henry Howard and I performed a laparotomy. We found the omentum adherent to the top of the bladder, and also, in two places, to the anterior abdominal wall; the cecum was bound to the ileum and the side wall of the abdomen and doubled over in such a manner as to adhere to the ascending and transverse colon. The appendix was atrophied but unusually long and with its apex adherent to the liver; it was removed and the adhesions broken up. As much of the raw surface as was possible was covered with peritoneum and omental patches. About three weeks after his operation, the patient had great showers of calcium phosphate, followed by one of urates, mixed with indigo, which could be seen as a dark powder in the urine, the urate crystals were very abundant and sparkled like topazes when the urine stood in the sunlight.

Before he had entirely convalesced from his operation, the colon bacillus infection had disappeared from the urine and it has never returned. The chronic constipation has never been entirely corrected, but by the use of oxgall tablets and agar agar, he has been able to prevent stasis, and on the few occasions when he has been constipated there has been no return of the bacilluria.

Case 2.—A. M., man, aged 47, came to me in March, 1915, complaining of uneasiness over the bladder. He had been treated for "uric acid" at Vichy, in France, and for stricture in Paris twelve years before. He had a residual of 10 c.c. with some blood in the urine. His trouble was attributed to stricture, as cystoscopic examination failed to reveal any lesions in the bladder. It was noticed that he had colon bacilli in the urine, but their presence was naturally attributed to the stricture. The urethra was dilated until we could pass a No. 28 Charrière sound without difficulty. The uneasiness over the bladder still remained and he still had bacteriuria.

A second cystoscopic examination, made with the Garringer instrument, showed that he had a posterior transverse bar just inside the bladder neck, and a small glandular prostatic tumor on the right side just outside the bladder neck; the bar was removed through a suprapubic incision by Young's punch, and the tumor by enucleation, July 9, 1915. Recovery was perfect. In September, however, he was still complaining of the uneasy feeling over the pubes, and he still had colon bacilli in the urine, together with great frequency. In December the urine continued cloudy, and the patient was again showing signs of slight but steadily increasing

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* Read before the Section on Genito-Urinary Diseases at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

residual urine. In the meantime I had noticed distortion of the image of the neck on the left side of the bladder with the appearance of a tumor of the prostate on this side.

Under daily treatments with local antiseptics, phenol (carbolic acid), 1 per cent. in boric acid solution, and silver nitrate solutions and the use of the Kollman dilator, in February, 1917, there was no residual urine, but the urine still contained pus and swarmed with colon bacilli, and this condition continued steadily. In January, 1917, I began to place importance on the fact that the man was chronically constipated. Ureteral catheterizations showed that he had colon bacillus bacteriuria in the pelves of both kidneys. I had the intestine examined with the roentgen ray and found that there was a stasis in the ascending colon with an old adhered appendix apparently attached to the top of the bladder. April 5, 1917, Dr. Rea Smith and I performed a laparotomy. We found the ascending colon twisted on itself. The deformity appeared to be prenatal more than inflammatory, but it was adherent to the transverse colon and to the omentum, almost its entire length. We broke up the adhesions, straightened out the intestine, and patched the raw places with mobilized omentum.

Recovery was very slow but complete, and on May 5 the patient was having natural bowel movements, a thing he had not had since boyhood. The urine was still full of colon bacilli. May 8, I performed a perineal prostatectomy and removed the growth on the left side, which I had suspected to be cancerous because of its rapid development after the suprapubic operation, and straightened out an adhered verumontanum. Thus I took away the nest from which the infection started and removed the obstruction to the exit of urine, which kept up the infection, and brought the man into a condition in which a cure could take place.

The result is that today he has no longer any uneasy feeling over the bladder, he lies in comfort all night, the urine is perfectly clear and free of colon bacilli, he passes it naturally, he has bowel passages without the use of laxatives, and he is to all appearances a perfectly normal and well person.

EPIDEMIC PNEUMONIA (SPANISH INFLUENZA) IN PREGNANCY

EFFECT IN ONE HUNDRED AND ONE CASES

WESLEY J. WOOLSTON, M.D.
Attending Gynecologist, Cook County and Wesley Hospitals; Assistant Professor of Gynecology and Surgery, University of Illinois College of Medicine

AND

D. O. CONLEY, A.B., M.D.
Resident Physician, Cook County Hospital

CHICAGO

During the recent epidemic of pneumonia, or so-called Spanish influenza, 2,154 patients were admitted to Cook County Hospital between Sept. 18 and Nov. 5, 1918. Of this number, 101 were pregnant women.

Of these 101 cases of pneumonia, complicated by pregnancy, fifty-two died, giving a mortality of 51.4 per cent., as compared with a mortality of 719, or 33.3 per cent., of the 2,154 patients admitted to the general hospital. This shows a relatively higher death rate by 18.1 per cent. in the pregnant women. These apparently high percentages of mortality may be explained in part by the condition of the average patient on entrance to this hospital.

The Cook County Hospital received by far the largest majority of the patients during this epidemic, all of whom were from the poorer classes of the population. The patients were all extremely ill on entrance, many dying in ambulances on the way to the hospital, many in the examining room, and others while on the way to the wards. Of the fifty-two deaths occurring in the pregnant women observed, 53 per cent. died within the first twenty-four hours and 73 per cent. in the first forty-eight hours after admission.

Of the fifty-two deaths, in thirty-nine, or 75 per cent., an interruption of pregnancy occurred, and in a great majority of these cases this occurred within twenty-four hours preceding death. These figures include abortions, premature labor and labor at or about term. Interruption of pregnancy occurred with equal frequency, irrespective of the month of gestation.

Thirteen, or 25 per cent. of the patients remained pregnant at death, and practically all of these were in the fifth to seventh month of pregnancy. Seven of these were in the seventh month, three in the sixth month, two in the fifth month, and one in the third month of pregnancy.

Of the forty-nine patients discharged, twenty-one, or 42.7 per cent., aborted or went into labor prematurely. The remainder of these were pregnant at the time of discharge.

The cause of this frequency of interruption of pregnancy is uncertain. The fact that by far the greatest majority of abortions or premature labors occurred within twenty-four hours after death, at which time the patients were extremely toxic, would lead one to assume that probably this condition, associated perhaps with the lack of proper oxygenation of the fetal blood, was responsible for this frequency. The cough, which was a constant feature in these cases, undoubtedly played a part in the interruption of the pregnancy. The exertion incident to abortion or labor also tended to exert a harmful influence on the mother.

The most prominent feature noted during the clinical course of the disease was the apparent ease of abortion or premature labor, its rapidity and the apparent lack of pain incident to it. The mental state of the patient due to the toxemia may possibly have accounted for the freedom from pain. In term labors, the duration seemed to be no longer than that of normal labor.

The bleeding incident to labor, which would be equivalent to venesection (a therapeutic measure suggested when cyanosis appears) did not appear to affect the clinical course of the disease.

Complications were few in this series of cases. One case of empyema of the streptococcic type developed, the contents of the pleural cavity being a reddish-brown fluid. The empyema developed late, as has been characteristic of the cases following this type of pneumonia. Four patients developed suppurative otitis media.

Blood counts revealed the characteristic leukopenia, the degree of leukopenia varying with the severity of infection. The white cell count gradually increased as improvement occurred. Five patients, at the onset, gave a true leukocytosis of from 15,000 to 20,000. All of these patients recovered.

Of the twenty-two babies born, two developed definite symptoms of bronchial pneumonia within from eighteen to twenty-four hours after birth. This short interval after birth would make it difficult to say that infection did not occur in utero. Lung punctures of the stillborn gave negative cultures, however.

CONCLUSIONS

The death rate among pregnant women is materially higher than among nonpregnant women.

The frequency of the interruption of pregnancy in epidemic pneumonia is very high.

Abortion occurs with relative ease and lack of pain.

In the majority of cases, death follows within twenty-four hours after emptying of the uterus.

The percentage of recoveries after interruption of pregnancy is small.

THE PROPHYLACTIC VALUE OF LEARY'S VACCINE

HARRY LEE BARNES, M.D.
WALLUM LAKE, R. I.

As an institution offers unusual advantages for the study of an epidemic and the measures for its control, a record of our experience with influenza vaccine at the state sanatorium may not be without value. The institution had about 225 patients and ninety-four employees. During the last two weeks of September, 1918, four employees and five patients contracted influenza. These patients were all in one ward of the hospital and were apparently infected from a patient who visited Woonsocket. They were isolated in rooms and a cubicle of the ward, and the disease did not spread.

INCIDENCE OF INFLUENZA AMONG VACCINATED AND UNVACCINATED

Wards	Vaccinated			Unvaccinated		
	Number of *Persons*	Cases of Influenza		Number of Persons	Cases of Influenza	
		Number	Per Cent.		Number	Per Cent.
East	32	11	34	26	12	46
West	31	6	19	10	3	30
Hospital 1	16	0	0	24	1	4
Hospital 2	14	1	7	24	0	0
Children	32	0	0	1	0	0
Employees	27	7	26	28	7	25
Total	152	25	16	113	23	20

The four employees were isolated in their rooms. September 29, all patients and employees, with few exceptions, were forbidden to receive visitors or leave the institution. We were free from influenza, which was at the height of the epidemic in the surrounding country, until October 10, when a woman patient admitted on October 9 developed the disease. October 14, a patient who slept near this patient developed influenza. October 22, the first case developed in the men's ward of the sanatorium, and from there the disease spread to the employees, until there had been a total of eighty-two cases, or 25 per cent. of the total population. All of the 114 young adults, including some expatient employees sleeping in the east and west wards, were probably well exposed to the disease and furnish the best opportunity to estimate its morbidity. Counting all cases that occurred before and after vaccination, 45, or 40 per cent., developed influenza. October 22 and the few days succeeding, influenza vaccine furnished through the courtesy of Dr. Timothy Leary of the Tufts Medical School was given to 172 employees and patients. The doses were 400, 800 and 1,200 million at twenty-four hour intervals.

In computing the incidence of the disease for comparison between vaccinated and unvaccinated, no cases were counted that developed before the vaccine was given, and no patient has been counted as vaccinated unless he received the three doses. Before the arrival of the vaccine, eight cases that terminated fatally had developed.

In estimating the value of the vaccine, it would seem clear that the children should be deducted from the total because they were quarantined and so far as known were not exposed to the disease. If the children are deducted, the influenza incidence was 20 per cent. among both vaccinated and unvaccinated. It would also appear preferable to deduct the two hospital wards which had only one case each which were so promptly isolated that the exposure probably was insufficient to test the vaccine. If these wards are deducted, ninety vaccinated persons furnished twenty-four cases, or an incidence of 26 per cent., while sixty-four unvaccinated persons furnished twenty-two cases, or an incidence of 34 per cent. In twenty-five influenza cases following vaccination, four patients, or 16 per cent., died. In fifty-seven influenza cases among the unvaccinated, the mortality was nine, or 15.8 per cent.

CONCLUSION

The morbidity was only slightly lower among the vaccinated, and the mortality among those who developed influenza was practically the same whether vaccinated or unvaccinated.

Military Medicine and Surgery

THE PANDEMIC IN THE ARMY CAMPS*

GEORGE A SOPER, PH.D., M.D.
Major, S. C., U. S. Army
WASHINGTON, D. C.

The pandemic in the Army camps was a part of the great outburst that swept over the United States in September and October, 1918. This, in turn, was a manifestation of the still larger visitation that was to cover most, if not all, of the world.

As soon as the pandemic appeared, each camp and other station of troops was required to keep the Surgeon-General informed of the appearance and progress of the disease. Daily and weekly telegraphic reports were sent in giving the number of new cases of influenza and pneumonia and other details. Most of the statistical data presented here are taken from these reports.

Were it not for the pulmonary complication which has accompanied it, few would doubt that the disease was influenza. Its epidemic character, its clinical aspects and its bacteriology, so far as they have been studied, all point to that disease. It will consequently be called influenza here.

As to the lung complication, that is a similar matter. Objection has been made to the use of the term "pneumonia" to describe it. As yet no other official designation has been given it. It may or may not be a part of the original disease. Pending further investigation, and since it must be given some name in this report, it will be called pneumonia here.

Had it not been for the pneumonia, the pandemic would not have attracted much attention. Epidemics of so-called "colds" and other respiratory diseases occur every fall, and if the typical influenza of today does not bear a close resemblance to these familiar infections, there have been many cases in which the difference was not discernible. It took the pneumonia with its high mortality to command attention. The pneumonia places this outbreak among the most striking pandemics of modern times.

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* From the Division of Infectious Diseases and Laboratories, Medical Department, U. S. Army.

Excluding the pneumonia, the influenza of September and October seems to be identical with the influenza that visited the Army training camps in the United States last March and April. That it attracted little notice then was due to its mild character.[1] The influenza which until recently has been reported from Europe appears to occupy a position between these two so far as severity is concerned.

Apparently there have been three visitations, or waves, each succeeding one being more severe, more widespread and more fatal than its predecessors. This fact may or may not have significance for the future. It is possible that there will be another wave. There may be one or more. It is equally possible that there will be none. There is no firm ground on which to base a prediction one way or the other. Considering the gravity of the matter, it would be unwise to assume that we are entirely done with the disease.

During the period from Sept. 12 to Nov. 1, 1918, inclusive, there were 306,719 cases of influenza reported among the troops in America. During the same time there were 48,079 cases of pneumonia and 19,429 deaths. The total strength of troops may be taken as one and a half million. Therefore it is approximately correct to say that about one in every five had influenza, that of these about one in six developed pneumonia, and that of the pneumonia patients about two out of five died.

The country as a whole suffered severely but not so greatly in proportion to the population as did the camps. Up to and including October 26, a total of 86,045 deaths from influenza and pneumonia had been reported to the United States Public Health Service. This figure is incomplete, since it includes no report from some states and only partial reports from others; in many states deaths for cities only were included.

In the forty-five principal cities for which statistics are available, 3.24 per thousand are reported to have died. There were 127,654 deaths from all causes. Had there been no epidemic of influenza-pneumonia, it is estimated that there would have been 47,967 deaths. The difference therefore represents the deaths due to the pandemic: 79,687. If this rate prevailed throughout the continental United States, there would have been 341,021 deaths. To this must be added the 19,429 in the camps, making a total of 360,450 deaths. These figures are not estimates—they are not even good guesses; but they serve to show the scale on which the pandemic operated.

I. The Statistical Facts

THE OUTBREAK

The first report that a serious epidemic existed in any camp came from Devens, at Ayer, Mass. September 16, the camp sanitary inspector, reporting through the camp surgeon to the Surgeon-General of the Army, announced that an epidemic of so-called "Spanish influenza" had broken out at Devens as a part of a general epidemic that had attacked Boston and the neighboring states and towns some weeks before.

The Devens epidemic is supposed to have commenced, Sept. 7, 1918, in D Company, Forty-Second Infantry. On that date a case of supposed meningitis was sent to the hospital from this company; on the following day twelve cases were sent for observation. These proved to be influenza. By the 16th, thirty-seven cases had gone from the same company. One death from pneumonia had occurred. Almost simultaneously, other cases appeared in other organizations. By September 12 the total number of patients that had been admitted was 599. The disease spread rapidly, in spite of the measures taken to check it. September 20, the epidemic reached its maximum intensity. On that day, 1,543 new cases were reported as having been admitted to sick report. After reaching this high point the number of new cases rapidly became less, so that by the end of the month there were less than 100 new cases reported per day.

Meanwhile, pneumonia had become a frequent and fatal accompaniment of the influenza. Fifty new cases were reported, September 19, less than two weeks after the influenza had been discovered. The number rapidly increased: September 24, there were 342 new cases. The number each day remained at about 200 for four days; then there was a decrease, until, before the end of the month, forty per day had been reached. By October 6, the incidence had fallen to ten or so a day. Through the rest of the month the number varied between three and seventeen per day. There was no return to large numbers.

TABLE 1.—THE RISE AND FALL OF THE EPIDEMIC AT CAMP DEVENS

	Duration, Days	Cases Influenza	Cases Pneumonia	Deaths
Rise (Sept. 12-19)............	8	3,283	43	16
Peak (Sept. 20-21)...........	2	2,722	205	43
Rapid decline (Sept. 22-29)...	8	3,141	1,495	298
Slow decline (Sept. 30-Oct. 18)	19	571	571	310

The Devens outbreak, so far as may be understood from the records at hand, could be divided into four parts, as shown in Table 1. It will be observed that the rise of the epidemic covered a period of about eight days; the peak, two days; the rapid decline, eight days, and the slow decline, nineteen days. Half of the deaths and nearly three quarters of the pneumonia occurred within less than three weeks of the outbreak.

CHARACTERISTICS OF THE TYPICAL EPIDEMIC

The characteristics of the Devens epidemic have been described here because they represent what has occurred at many camps. The earliest cases have often escaped identification. They have sometimes been taken for cases of food poisoning, meningitis or one of the common exanthems. The disease, which is epidemic, bears little resemblance to the coryzas and other respiratory affections to which the term "influenza" has been generally applied for the last twenty years. The so-called influenzas of ordinary times seem to have no relation to the present disease. Yet with a knowledge that influenza was in the vicinity, it is probable that cases of other respiratory infections have often been reported as that disease

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[1] A report by the present writer, on an influenza epidemic in the Oglethorpe camps in March, 1918, may be found in abstract in the Journal of Laboratory and Clinical Medicine, 1918, 3, 46-49, and the Military Surgeon, 1918, 43, 398-402.

The leading symptoms in the typical cases are severe headache, chills or chilliness, pains in the back and legs, temperature sometimes as high as 104, great prostration, and drowsiness. Occasionally there are nervous symptoms; sometimes, but not always, the eyes and the air passages of the nose and throat are affected; there may be gastro-intestinal disturbances. The onset is sudden.

The fact that an epidemic existed in a camp has been generally recognized when the number of new cases has amounted to 100 or more per day. The incidence then increases rapidly. Sometimes the records show a great number of cases at the start, and there are marked fluctuations in the daily incidence as the epidemic continues. Striking irregularities do not represent the way in which the disease occurs, but are to be accounted for by the stress and difficulty with which the returns are collected. The greatest number of new cases reported for any day has often considerably exceeded 1,500 in a camp. At Devens the maximum was 1,543, at Grant, 1,810 and at Custer, 1,764.

The principal camp outbreaks have been charted as a part of the routine work of watching the progress of the pandemic. In making these charts it has been found convenient to mark time along the horizontal scale, giving one fifth of an inch to a day. The daily incidence of cases has been measured vertically, one inch representing 100 cases. So charted there is much similarity among the curves and especially among the members of certain groups of them. The explosive character of the infection is plainly indicated in most, as are the short duration, large incidence and rapid subsidence. The curves are never smooth, but are jagged, with steep inclines between the peaks and valleys. Only in exceptional camps has there been a recurring wave of noteworthy proportions during the course of the epidemic.

In another series of charts, the daily incidence has been plotted as rates, thus making allowance for the changes in strength that have occurred. In a third series the jagged irregularities have been eliminated, and smooth curves trace the rise and fall of the influenza and pneumonia. This has been done for all the camps. These pictures show as clearly as the data permit how the disease has come and gone. The charts furnish an invaluable means of analyzing and comparing the several camp epidemics. They have made plain many instructive facts and have pointed the way to many useful conclusions. But to go into the question of the individual epidemics would carry this discussion beyond its proper bounds.

Stated briefly, the influenza has usually occurred as an explosion, probably showing irregularities in the reporting. The maximum effect has been felt within about ten days after the onset. The duration has been less than three weeks, in most instances.

Within about a week after the outbreak of the influenza, there occurs an ominous prevalence of pneumonia. The pneumonia does not exist as a separate epidemic, but is always a follower of influenza. How the two diseases are related is not positively known. It is clear that the influenza paves the way for the pneumonia, if it does not actually produce it. Most of the pneumonia is of the lobular type and presents various unusual aspects. The time of greatest incidence is usually about a week after the greatest incidence of influenza.

The curves of incidence of pneumonia, when plotted as has already been explained, and with the same scales, are wholly different from those of influenza. The pneumonia does not appear to have been explosive. The curves for the different camps do not resemble one another. One would say that the pneumonia bore no fixed relation whatever to the influenza, except that it followed it.

SPREAD OF THE PANDEMIC

The second camp to report an epidemic, following Devens, was Upton, on Long Island, N. Y.; the third was Lee, in Virginia. Dix, in New Jersey, and Jackson, in South Carolina, followed immediately. Hoboken, N. J., Syracuse, N. Y., Gordon, in Georgia, and Humphreys, in Virginia, all reported on the same day. Within a week from the start, nine large camps in widely separated parts of the country were attacked. Others followed in rapid succession. Table 2 gives the order, according to the daily telegraphic reports.

TABLE 2.—ORDER IN WHICH THE CAMPS WERE ATTACKED

Order		Date	Order		Date
1	Devens	Sept. 12	11	Greene	[illegible]
2	Upton	Sept. 13	11	[illegible]	[illegible]
3	Lee	Sept. 17	12	[illegible]	[illegible]
4	Dix	Sept. 18	12	Bowie	Sept. 27
4	Jackson	Sept. 18	13	Johnston	Sept. 28
5	Hoboken	Sept. 19	13	Sheridan	[illegible]
5	Syracuse	Sept. 19	13	[illegible]	[illegible]
5	Gordon	Sept. 19	14	[illegible]	[illegible]
5	Humphreys	Sept. 19	14	[illegible]	[illegible]
6	Logan	Sept. 20	15	Custer	Sept. 30
6	Funston	Sept. 20	15	Hancock	Sept. 30
6	Meade	Sept. 20	16	Travis	Oct. 1
7	Grant	Sept. 22	17	Cody	Oct. 3
7	Taylor	Sept. 22	18	Forrest	Oct. 6
8	Sevier	Sept. 23	19	MacArthur	Oct. 7
8	Lewis	Sept. 23	20	Fremont	Oct. 8
8	Newport News	Sept. 23	21	Wadsworth	Oct. 11
9	Pike	Sept. 24	21	Wheeler	Oct. 11
10	Beauregard	Sept. 25	21	Greenleaf	Oct. 11
10	Eustis	Sept. 25	22	Las Casas	Oct. 29

During this period, September 12 to 30, inclusive, thirty-one camps were attacked. The epidemics in this group had subsided in every case by November 1, with the exception of Hoboken, Kearney, Bowie and Shelby. Ten additional camps were attacked during October, completing the list of all the important camps in the United States. Las Casas, Porto Rico, which is last on the list, did not report cases until October 29, on which date an accumulation of 562 admissions was reported.

COMPARISON BETWEEN TENT AND BARRACK CAMPS

Of the thirty camps attacked during September, eighteen were barrack camps, eleven were tent camps, and two were ports of embarkation. During October, eight tent camps and two cantonments were attacked.

The appearance of the pandemic in the tent camps was apparently delayed by reason of their position. They were mostly in Southern states and not immediately adjacent to the seaboard. Speaking generally, the pandemic spread from the sea inland, and from the Northeast to the West and South. There is no reason to suppose that it traveled more rapidly than persons could travel. In cases in which it has appeared to do so, it is probable that infection has been established from foci before the latter were recognized, or from earlier outbreaks.

The pandemic appeared seven days later in the camps than in the cantonments, when these two kinds of camps are compared as groups. Taking the barrack camps as one group and the tent camps as another, it appears that the disease spread rapidly in both—as rapidly in the one as in the other. There was, in fact, a remarkable similarity in the rate of spread in each kind of camp.

Interest attaches to a comparison between the relative severity with which the tent and barrack camps were attacked for a number of reasons. Among these is the fact that the tents afforded a greater separation of the men than did the barracks. The distribution of cases in cantonments and tent camps during the period of September 12 to October 31, inclusive, is given in Table 3.

TABLE 3.—DISTRIBUTION OF CASES IN CANTONMENTS AND TENT CAMPS, SEPTEMBER 12-OCTOBER 31

	Cantonments	Tent Camps
Camps attacked	20	19
Combined strength	748,632	313,362
Influenza	158,104	69,761
Pneumonia	30,099	9,740
Deaths	10,533	2,923
Per cent. having influenza	21.1	22.2
Per cent. having influenza and pneumonia	19.0	13.9
Case fatality of pneumonia	35.0	30.1

It should be noted that while the number of cases of influenza reported by the cantonments has been more than twice the number reported by the tent camps, the strength of the cantonments has been greater in almost the same proportion. When rates instead of cases are considered there appears to have been less difference in the severity of the pandemic than might be expected. But if there has been as much influenza in the one kind of camp as in the other, there has been no similarity in respect to the incidence or fatality of pneumonia.

The percentage of cases of influenza that developed *pneumonia* has been greater in the cantonments than in the tent camps; 9 per cent. in the one, against 13.9 in the other. The case fatality of pneumonia has also been greater in the cantonments than in the tent camps.

In order to study more carefully the progress of the pandemic in the cantonments and tent camps, Table 4 was prepared. Here the camps and cantonments are divided into two groups; the figures given are in the form of rates (annual per thousand). These show the suddenness with which the epidemic appeared, how rapidly it rose to its point of greatest intensity, and how it subsided.

TABLE 4.—PROGRESS OF THE INFLUENZA IN THE TENT AND BARRACK CAMPS

Cantonments	Annual Rates	Date	Annual Rates	Tent Camps
First report	255	Sept. 12		
	995	Sept. 19	73	First report
Peak	5,765	Oct. 4	1,850	
	2,220	Oct. 10	3,865	Peak
	180	Oct. 26	605	Lowest since peak
Lowest since peak	140	Oct. 28	1,610	
Daily incidence	330	Oct. 31	915	Daily incidence

According to this table, the tent camps followed the barrack camps in point of time but not in violence of outbreak.

COMPARISON BETWEEN CAMPS ACCORDING TO THE PROPORTION OF MEN ATTACKED

So much for the comparison between the tent and barrack camps. Turning attention now to the camps with regard solely to the proportion of men attacked, the camps may be thus divided into groups according to the proportion of men attacked with influenza: Group 1, from 30 to 50 per cent.; Group 2, from 20 to 30 per cent.; Group 3, from 10 to 20 per cent.; Group 4, less than 10 per cent.

Cody leads the first group with 49.8 per cent. of all troops attacked. Other camps in this group are Beauregard, 39.6 per cent.; Wadsworth, 38.6; Bowie, 38.1; Hoboken, 30.5, and Devens, 30.1.

Dodge has had 20 per cent. of all troops attacked and is the first in Group 2. Fourteen other camps fall in this group: Custer, MacArthur, Meade, Pike, Grant, Greene, Funston, Forrest, Travis, Logan, Lee, Hancock, Sheridan and Greenleaf.

Fifteen camps are contained in the third group. Fremont, Lewis and Wheeler, standing at the foot of the list, made up Group 4.

As to fatalities from pneumonia, Grant and Sherman are foremost. At Sherman, 61.3 per cent. of all pneumonia patients have died, and at Grant 45.7 per cent. While the case fatality has been still higher at Wadsworth, Forrest and Greenleaf, the total deaths reported by these camps have been but little more than one third of the total reported by Sherman alone. Special mention should be made of the situation at Wheeler. Only seventy cases of influenza have been reported, but a total of 361 cases of pneumonia and sixty-one deaths have occurred.

SEVERITY IN RELATION TO THE ORDER OF ATTACK

Some interesting facts are revealed when the camps are arranged according to the dates of attack, as shown in Table 5. In this table the camps have been arranged in groups of five wherein are indicated camps reporting epidemics at about the same general stage of the pandemic. This table merits careful study.

TABLE 5.—CASES AND DEATHS AMONG TWENTY CAMPS ARRANGED ACCORDING TO THE CHRONOLOGICAL ORDER OF THEIR ATTACK

	Total Cases Infl.	Total Cases Pneu.	Total Deaths Pneu.	Per Cent. Attacked Infl.	Per Cent. Pneu. to Infl.	Per Cent. Deaths Pneu.
Five camps* attacked (Sept. 12-18)	46,569	7,968	3,000	21.4	17.1	37.6
Five camps† attacked (Sept. 22-24)	44,000	8,011	2,867	21.4	18.2	35.7
Five camps‡ attacked (Sept. 29-Oct. 1)	36,044	7,387	2,484	23.8	21.8	31.7
Five camps§ attacked (Oct. 3-11)	20,096	1,837	579	28.9	8.9	31.5

* Devens, Upton, Lee, Dix, Jackson.
† Grant, Taylor, Sevier, Pike, Newport News.
‡ Sherman, Dodge, Shelby, Custer, Travis.
§ Cody, Forrest, MacArthur, Wadsworth, Greenleaf.

It shows that the percentage attacked by influenza increased as the pandemic continued. This is most strikingly indicated in the group which was attacked from October 3 to 11. This group reported 28.9 per cent. of all troops stricken, as compared with 21.4 per cent. in the first group. The inference is that the disease increased in infectivity, or that as the pandemic spread it reached troops who were more susceptible. The latter is probably the fact.

The percentage of influenza cases that developed pneumonia increased as the pandemic proceeded, until the last group (attacked from October 3 to 11) was reached, when a notable drop from 21.8 to 8.9 per cent.

is indicated. This decrease is remarkable. It is probably due to the fact that all the cases of pneumonia that would occur had not yet developed in these camps. Cody, Forrest, Wadsworth and Greenleaf, all in the fourth group, were just passing the peak of influenza during the last four days of October.

It is noteworthy that the case fatality in pneumonia decreased with each successive group.

SEVERITY IN RELATION TO GEOGRAPHIC LOCATION

On considering the camps when grouped according to their location, it has been found that those in the Southwestern section, including the states of Texas, Arkansas, Louisiana and New Mexico, had relatively more men attacked by influenza than did any others. No camp in this group had less than 20 per cent. attacked, and three (Cody, Beauregard and Bowie) exceeded 30 per cent. For the period of the epidemic including October 31, Cody was first on the list of all camps, with 49.8 per cent. of all troops attacked. No explanation is offered for this remarkable fact.

An arrangement of the camps both according to their percentages of men attacked and geographic location is given in Table 6.

TABLE 6.—RELATIVE INCIDENCE OF INFLUENZA IN THE CAMPS ARRANGED GEOGRAPHICALLY

Per Cent. Attacked	South-western	Atlantic Coast	South-eastern	North Central	Pacific Coast
30 to 50	Beauregard Cody Bowie	Hoboken Devens	Wadsworth		
20 to 30	Dodge MacArthur Pike Travis Logan	Meade Lee	Greenleaf Hancock Sheridan	Custer Grant Funston	
10 to 20		Newport News Dix Upton Syracuse Eustis	McClellan Johnston Jackson Shelby Sevier Gordon	Taylor Sherman	Kearney

In the Atlantic Coast group, two camps had more than 30 per cent. attacked; two camps had from 20 to 30 per cent., and five had from 10 to 20. This group is second on the list when the prevalence of influenza is considered.

TABLE 7.—RELATIVE INCIDENCE OF PNEUMONIA FOLLOWING INFLUENZA IN THE CAMPS ARRANGED GEOGRAPHICALLY

Per Cent. Attacked	South-western	Atlantic Coast	South-eastern	North Central	Pacific Coast
30 to 40				Sherman	Lewis
20 to 30	Travis	Meade	McClellan	Taylor Grant Custer	
10 to 20	Beauregard MacArthur Pike Logan	Upton Syracuse Hoboken Devens Lee Dix Newport News	Sevier Greene Hancock Sheridan Jackson Gordon Johnston	Dodge Funston	Fremont
Less than 10	Bowie	Eustis	Wadsworth Greenleaf Shelby		Kearney

One camp in the Southeastern group exceeded 30, and three had from 20 to 30 per cent. of all troops attacked. Of the seven remaining camps of the group, six had from 10 to 20 per cent., and one had less than 10 per cent. The North Central group had no camp that exceeded 30 per cent. Of the five camps considered in this group, three had from 20 to 30 per cent. of men attacked, and two had from 10 to 20. The influenza appears to have been least prevalent in the Pacific Coast group. One camp had from 10 to 20 per cent. attacked, and two had less than 10 per cent.

Pneumonia following influenza was most prevalent in the North Central group of camps. Sherman, in this group, had 35.7 per cent. of all influenza cases develop pneumonia. Three camps had from 20 to 30 per cent.

Lewis, the only other camp to exceed 30 per cent., is in the Pacific Coast group. Two other camps in this group reported less than 20 per cent. Lewis is farthest north. The Atlantic Coast group had one camp with from 20 to 30 per cent. of pneumonias; seven with from 10 to 20 per cent., and one with less than 10. Rates distributed in the Southeastern group were: from 20 to 30 per cent. at McClellan; from 10 to 20 per cent. in seven camps; less than 10 per cent. in three camps.

TABLE 8.—RELATIVE CASE FATALITY OF PNEUMONIA IN THE REGIONAL GROUPS OF CAMPS

Group	More than 60 Per Cent.	40 to 60 Per Cent.	30 to 40 Per Cent.	Less than 30 Per Cent.
Southeastern	1*	2	4	5
North Central	1	1	2	2
[illegible]	1	1	1	3
	...	2	5	2
	...	...	1	2

* Figures indicate number of camps.

The case fatality of pneumonia has been greater in the Southeastern, North Central and Southwestern groups than in the Atlantic and Pacific Coast groups.

TABLE 9.—AVERAGE PERIOD OF INCREASE, CREST AND RAPID DECLINE OF THE EPIDEMICS IN THE REGIONAL GROUPS OF CAMPS*

Group	Increase (Days)	Crest (Days)	Decline (Days)
Atlantic Coast	7	7	5
[illegible]	6	9	6
	6	4	6
	5	6	6

* Twenty-five camps are considered in this tabulation.

The increase has been most rapid in the Southwestern group: five days. The Southeastern and North Central groups reached the high point in six days. The Atlantic Coast group was on the increase for seven days. The average period of very high incidence was nine days in the Southeastern group. The shortest period of high incidence was four days, in the North Central group. The period of rapid decline was five days in the Atlantic Coast group, and six days in all other groups.

CASES OF INFLUENZA AND PNEUMONIA AND DEATHS IN THIRTY-EIGHT OF THE LARGEST CAMPS

Table 10 gives for each large camp the number of cases of influenza and pneumonia, percentages of troops attacked, percentages of deaths and the length of the epidemic in days. The camps have been arranged in the order of the percentage of men attacked in each.

Next, in Table 11, is given the total number of cases of influenza and pneumonia and deaths week by week from the beginning of the pandemic to November 1, for all troops in the United States. This table shows the remarkable activity of the influenza pandemic, considering the camps as a whole. Within these weeks it had reached its acme and had begun to decline. Its subsidence was as rapid as its rise. In the space of less than two months it had come and gone, leaving only a few cases in some of the camps in its trail.

TABLE 10.—INFLUENZA, PNEUMONIA AND DEATHS IN THE LARGE CAMPS, PERIOD SEPT. 12 TO OCT. 31, 1918, INCLUSIVE

	Cases Infl.	Cases Pneu.	Total Deaths	Per Cent. Attacked Infl.	Per Cent. Pneu. to Infl.	Per Cent. Deaths Pneu.	Duration Epidemic in Days
Group 1							
Cody	2,337	252	46	49.8	10.8	18.2	28
Beauregard	5,252	1,007	422	39.6	19.2	41.9	36
Wadsworth	5,505	357	60	38.6	6.5	16.9	20
Bowie	4,052	119	104	38.1	2.9	89.8	32
Hoboken	13,563	2,280	794	30.5	16.9	34.9	42
Devens	13,398	2,288	794	30.1	17.1	34.9	49
Group 2							
Dodge	9,398	1,847	570	29.0	19.7	30.8	32
Custer	11,626	2,437	669	29.0	20.9	27.8	31
MacArthur	6,010	852	188	28.1	14.1	20.4	24
Meade	11,449	2,013	796	27.8	25.3	27.4	41
Pike	13,273	1,379	455	26.7	10.3	32.7	37
Grant	10,717	2,335	1,068	25.8	21.8	45.7	39
Greene	4,200	626	258	25.8	14.9	41.8	30
Funston	13,526	2,328	888	24.9	17.2	37.4	41
Forrest	2,307	33	22	24.9	1.1	66.6	25
Travis	8,470	1,742	168	24.7	20.5	9.0	30
Logan	3,137	393	16	24.6	12.4	3.8	41
Lee	11,298	1,919	672	22.9	17.0	34.6	43
Hancock	7,715	1,209	462	22.2	15.8	37.4	31
Sheridan	4,758	521	132	20.4	10.3	24.6	28
Greenleaf	4,747	343	263	20.3	7.2	75.2	20
Group 3							
Taylor	11,587	2,800	830	19.2	24.2	29.0	39
Dix	9,253	1,673	829	19.0	17.9	49.8	44
Jackson	7,500	1,114	362	18.9	14.9	31.3	43
Shelby	1,761	94	19	18.8	5.3	24.8	28
Syracuse	2,031	401	164	18.4	19.8	40.6	42
Sevier	4,526	896	319	16.3	19.7	35.7	38
McClellan	4,718	993	218	16.1	20.2	21.3	28
Eustis	1,745	67	10	14.8	4.0	16.2	36
Newport News	3,897	601	195	14.2	15.5	30.5	34
Upton	5,090	974	343	13.9	19.2	34.9	48
Sherman	4,789	1,717	1,058	13.5	35.7	61.3	32
Kearney	2,450	186	37	13.5	7.9	19.8	34
Gordon	4,155	626	192	11.3	14.8	30.4	42
Johnston	2,117	383	161	11.1	18.2	40.9	30
Group 4							
Fremont	2,347	392	132	9.8	16.1	31.2	23
Lewis	3,141	991	148	9.7	31.6	14.8	33
Wheeler	70	361	61	0.8	516.0	17.8	

TABLE 11.—INFLUENZA AND PNEUMONIA CASES AND DEATHS REPORTED AMONG ALL TROOPS IN THE UNITED STATES FOR EACH WEEK DURING THE PERIOD FROM SEPTEMBER 12 TO OCTOBER 31, INCLUSIVE

Week Ended	Cases		Deaths	
	Influ.	Pneu.	Influ.	Pneu.
September 20	10,094	758	2	96
27	37,493	4 313	19	953
October 4	88,478	8,655	13	2,431
11	90,393	17,882	165	6,055
18	43,779	11,013	270	5,289
25	19,996	2,454	256	2,757
November 1	16,516	3,004	.....	1,173
Total	306,719	48,079	725	18,704

II. The Handling of the Epidemic

ACTION BY THE SURGEON-GENERAL'S OFFICE

The steps that were taken to combat the pandemic may be divided into those followed by the direction and guidance of the Surgeon-General's Office at Washington, and those that the camps themselves initiated. These steps may be collectively described as having fallen under three heads, (1) isolation, (2) sanitation and (3) education.

1. By isolation is meant any and all procedures by which infected could be separated from the susceptible persons. Included in this list were steps for the prevention of crowding, quarantine, head to foot sleeping, the separation of heads at mess, and the use of cubicles and masks.

2. Under sanitation may be included the cleaning and airing of barracks and bedding, the oiling of floors to keep down the dust, the boiling of mess-kits and many other procedures.

3. Education, always a predominant motive in the Army, was applied as never before to the prevention of disease among troops. The medical officers were taught what to expect in the way of symptoms and what principles of prevention to put into effect. The men were taught something of the principles of disease transmission and how to carry out their part of the work of prevention. Orders were issued, lectures given, and examples shown. Throughout, the line gave cordial cooperation.

The following paragraphs give a summary of the action taken by the Surgeon-General's Office, and a brief account of what an inspector from that office saw when he visited one of the large camps.

Soon after the pandemic disclosed itself, a recommendation was made by the Acting Surgeon-General to the chief of staff that further increments of the draft be stopped and that all troop movements between infected and uninfected camps be checked. On recommendation, the Adjutant-General ordered the setting aside of buildings to supplement the base hospitals during the epidemic and the furnishing of all necessary unskilled labor for the hospital needs. On September 24, instructions were sent to all camp surgeons regarding the symptoms, epidemic aspects and methods of handling the disease. Large numbers of medical officers and nurses were hurried to the camps. Instructions were sent to buy locally any medical supplies not promptly obtainable through medical channels.

Special sanitary inspectors from the Surgeon-General's Office visited many of the camps with a view to investigating the situation and proposing any improvements that appeared possible in the methods of handling the situation. When thought necessary, camps were quarantined against the civil communities or vice versa, as appeared desirable to the Acting Surgeon-General in order to protect the troops or civilians or both. There was issued a set of a dozen rules on personal hygiene designed to aid the individual in maintaining health during the emergency.

REPORT OF AN INSPECTION OF A CAMP

Under date of September 30, there was sent to camp surgeons, surgeons of recruit depots and independent stations, department surgeons and officers in charge, Air Service Division, the report of a sanitary inspector from the Surgeon-General's Office to show the steps taken at one camp to handle the situation in a satisfactory manner and the recommendations for further improvement made by the inspector. The following abstract is taken from that report.

It should be stated that the policy of the Surgeon-General's Office has been to leave many of the details of camp management, so far as relates to sanitary and medical matters, to the camp authorities on the theory that they alone can be perfectly familiar with the local needs and resources, giving such aid in the way of recommendations as a general knowledge of the situation, and the correct principles to be observed, permit.

The inspection was made two weeks after the epidemic started. The epidemic was at its height: about one in ten of the command was sick with influenza. Of this number about a third were in hospital; the rest were in their quarters. There were 536 cases of pneumonia; there had been 253 deaths.

The report stated that there was no overcrowding. The barracks were marked with their maximum capacity on the basis of 45 square feet of floor space per man, and this was not exceeded. About one fourth of the entire number of troops was under canvas, five men to a tent. The men slept with head and feet alternating to increase the distance between heads as much as possible. In some of the barracks the "cubicle system" was contrived by means of shelter tents suspended between the beds in order to make the separation of the men more complete.

The heating arrangements were in operation in all the buildings, and the freest possible ventilation was enforced. Beds, bedding and clothing were kept outdoors all day, weather permitting. The tents were furled daily. All floors had been oiled once, and some twice, since the epidemic started. Overcoats and woolen underwear had been issued. There was ample bedding. The men who were not sick were kept outdoors all day. An officer was on duty in each barrack day and night.

The camp and barracks and messes were clean. Ample steps had been taken to eradicate flies. Dishes were boiled after each meal. When individual mess kits were used, they were washed in boiling water after each meal and actually boiled at intervals. There were no common drinking cups in use. Dust filled the air on the day of the inspector's visit and was very annoying.

Two thousand negroes who had arrived at camp from civil life between two and five days earlier had been put in an area by themselves and efficiently quarantined, the result being that no case of influenza had appeared among them.

THE HOSPITAL FACILITIES

The capacity of the base hospital had been increased by fitting up a group of eighteen company barracks, fortunately empty, and placing this annex under the base hospital administration. The annex was opened about ten days after the epidemic started, and had a capacity of 1,040 patients. It was described as in excellent condition. Each patient had 100 square feet of floor space; quartermaster cots were used with straw mattresses and the soldiers' own blankets. The Medical Department supplied sheets, pillows, pillow cases and pajamas. There were one female nurse and 186 enlisted men from the line on duty; 100 more nurses were expected. There were 977 patients; of these eighteen had pneumonia.

Ambulant cases, that is, influenza patients whose temperatures had been normal for from twenty-four to forty-eight hours, went out of their particular building to the nearest mess for meals. Men with abnormal temperatures were not allowed to go out to the lavatories. Influenza patients in hospital were being kept from seven to eight days; the rule was to keep them till the temperature had been normal four days.

The attendants wore masks, but cubicles had not been installed. The order and system were reported by the inspector as most commendable.

Further to supplement the base hospital, there was a second group of company barracks. These were run as field hospitals. Their capacity was 700 patients. The conditions here were not quite so good.

The base hospital was stated to be in excellent condition. There were 2,800 patients here, about 300 of whom were venereal and in tents; about 400 others were to be transferred to the annex three quarters of a mile away. There was only slight crowding. The porches were occupied by beds. All pneumonia patients in wards were cubicled, but not those on the porches, though the beds were close together. The influenza patients were not cubicled because of lack of sheets, but there was no serious shortage of supplies. At the outset the camp surgeon directed the camp supply officer to purchase whatever was necessary.

There was one ward full of sick nurses, of whom thirty were said to have pneumonia. One nurse, one dietitian, one medical officer and one dental officer had died. The patients were arranged heads and feet alternatively. The attendants were all masked. The ventilation was ample. The supply of medical officers, nurses, laboratory workers and enlisted men, Medical Department, was being increased. Numerous circulars relative to the prevention of influenza and its complications had been issued by the camp authorities, and these were very complete and satisfactory.

THE INSPECTOR'S RECOMMENDATIONS

In his reports to the Acting Surgeon-General and to the commanding general of the troops, the inspector described the whole situation as well handled. Nevertheless it was recommended among other things that no soldiers be returned to duty after influenza until at least ten days after their temperature had become normal; that all influenza patients should have at least 100 square feet of floor space and be screened from each other, the idea being to prevent pneumonia, and that no influenza patients be treated in barracks that were in part occupied by healthy soldiers.

It was recommended that both in barracks and tents the cubicle system be adopted for all healthy men by the use of the shelter tent supported at one corner of the bed by a stick or hung from the ceiling by wire, and that mess tables be so arranged that the men should sit either on one side of the table alone, or else that the occupants of the two sides of the table be separated by a screen of cheese cloth suspended above the middle of the table.

It was recommended that the quarantine of the camp against the surrounding country, and of the surrounding country against the camp, be continued and that no one be allowed to enter or leave the camp except the friends and relatives of the seriously ill; that as soon as the epidemic disappeared the population of the camp be reduced so as to be placed on the basis of 50 square feet per man; that improvised corridors covered with canvas be provided to connect the lavatories with the barracks which are used for hospital purposes; that steps be taken to prevent men from crowding together at post exchanges and about stoves in barracks; that the laying of dust in camps be expedited, and that great care be taken in disinfecting clinical thermometers.

Some of the recommendations made were already contemplated by the camp authorities or were under way, but not yet completed, the inspector stated, on account of lack of time or material.

III. The Cause of the Outbreak

CHARACTER OF THE INFECTION

It is usually impossible accurately to trace the origin and paths of spread of a pandemic like the present one. The popular demand that this be done is natural but unreasonable. It rests on the supposition that disease can be run down like a criminal; that visible and recognizable traces are left by it. This is not always true. The pursuit is often so illusive that deductions stronger than inferences are not warranted regarding it. With a disease like influenza, the proof seldom amounts to complete demonstration. The routes of infection are generally hidden beneath a mass of imperfect observation, wrong theory and illogical deduction. Under the circumstances the best that can be done is to follow out the larger aspects of the question.

The present pandemic offers no exception to this rule. In the minds of thousands of persons the disease is hopelessly confused with minor respiratory diseases that have for years been loosely called influenza infections. Many do not know "Spanish influenza" when they see it, the symptoms being by no means easily recognized by those who have never had occasion to deal with it. And to the best informed there are many things about influenza that are shrouded in mystery. Consequently all that will be attempted here is the recording of some apparently well established facts and the drawing of some apparently safe inferences, leaving to others and especially to later investigators the task of interpreting the pandemic more fully.

These remarks seem to be called for by a demand for an explanation of the way in which the pandemic spread from one organization to another in a camp, from one camp to another, and from the camps to the towns and vice versa.

THE MEANS OF TRANSMISSION

First, it is necessary clearly to understand that the influenza to which attention is now called is a specific infective disease like cholera, typhoid, smallpox and others, and it has, at all times and in all places, shown a uniformity in its configuration and in its cause such as almost no other infectious disease has. These words were written nearly two generations ago by Hirsch, but they seem to have been forgotten. They were forgotten in England in 1889, when the pandemic of influenza broke out in that country and for some time failed of recognition. They were forgotten in the United States, where for nearly thirty years no sensational outbreak of the disease had occurred.

The disease is carried from place to place by persons, not things or by the general atmosphere, as was once supposed. Its rapidity of spread is due to its great infectivity, short period of incubation, missed cases, and absence of timely precautionary measures. An epidemic does not easily start, but once the flame is well kindled a conflagration occurs which cannot be stopped. The epidemics stop themselves. This they do either by an exhaustion of the susceptible material, by a reduction in the virulence of the causative agent, or both.

The disease has been taken into camps, from camp to camp, from camps to towns, and from towns to towns, by people. It cannot be said to have been proved that this is the only way in which it has been transmitted, but there seems no reason to look for more probable ways—according to modern theories, all respiratory infections are conveyed by contact. The travel and mingling that occur under ordinary circumstances seem to be quite enough to account for the facts.

In theory and practice influenza is preventable, but it is very difficult to control under municipal and military conditions. It rarely happens that the necessary measures—chiefly based on the principle of isolation—are taken in time. In the present pandemic the disease, on more than one occasion, has been confined to certain wards of hospitals to the exclusion of others. It has visited some camps and some organizations more severely than others. It is not possible as yet to state to what extent it has been actually controlled in the camps.

The pandemic may truly be termed an epidemic of epidemics. Like all great outbreaks of this most infectious of communicable diseases, the epidemics have occurred with electric suddenness, and, acting like powerful, uncontrolled currents, have produced violent and eccentric effects. The disease never spreads slowly and insidiously. Wherever it occurs its presence is startling. A large proportion of the men in one company may be infected while those in the next company may entirely escape.

How far the pandemic will spread will apparently depend only on the epidemic vagaries of the disease and the amount of material on which it can feed. It is too early to foretell the end or to measure the damage that will be done before it diseappears. Apparently it is destined to have a world wide distribution.

It is not improbable that the pandemic may disappear from the United States as rapidly as it came, although most persons hold the opinion that its final disappearance will be gradual, the extinction of the disease being postponed for many months. It is already practically gone in most army camps. It may or may not return. In the pandemics that sweep over the earth at long intervals, recurring waves of greater or less degree, separated by some months, commonly occur.

THE INFECTIVE AGENT

The causative agent is generally believed to be the bacillus of Pfeiffer; the means of transfer, droplets of moisture from the mouth and objects recently contaminated by the buccal and nasal secretions of those who harbor the virus. It is a fundamental assumption that influenza is produced when, and only when, material from the mouth or nose of infected persons gets into the mouth or nose of some one who is susceptible. As is plainly recognized in respect to intestinal infections, the hand probably plays an important part in the transmission of influenza. Coughing and sneezing help greatly to spread the infection.

It has long been known that interchanges of bacteria occur commonly from mouth to mouth under ordinary conditions of social intercourse. Most of these organisms are harmless under normal conditions of health. That their capacity for harm is sometimes increased, sometimes reduced, according to various circumstances, is highly probable. What these circumstances are is conjectural.

The Pfeiffer bacillus is no stranger to America; it was known to be rather commonly present in healthy persons before the pandemic. To account for the virulence that seems to be possessed by this organism now it has been suggested that (1) something must have happened to increase its virulence, or (2) a new and more active strain of it appeared, or (3) the susceptibility of those attacked became reduced. Some persons hold that the causative agent has not been discovered and that the Pfeiffer bacillus is not really responsible for the disease. Some even go so far as to say that the disease is not influenza. With these disputed points ti is not necessary to deal here. All three of the numbered propositions in this paragraph are accepted as probable by the present writer.

The conditions that govern susceptibility to influenza are not understood. Good general health, absence of fatigue and of cold and hunger are methods of prevention which have long been advocated by many and which in spite of scientific criticism still have much to recommend them. Whatever conduces to low bodily tone is believed by most persons to favor infection. Some, however, hold that specific immunity either does or does not exist and that wet feet, insufficient bedding, chill, hunger and fatigue have nothing to do with susceptibility.

Vaccination against pneumonia is practicable; but such preventive treatment is in the experimental stage as respects influenza. As to natural immunity, one attack is believed to protect against another, and some people seem to be immune without ever having experienced an attack.

The weather has always been supposed to exert an influence on influenza—the very name is derived from the effect which extraterrestrial conditions were supposed to exert on it. But although there has been a great deal of study of this matter from early times to the present, little is known concerning it. It is possible that the weather this fall has aggravated the influenza and contributed to the incidence of the pneumonia. The pandemic appeared after a very hot season had suddenly been succeeded by a very cold one. After the pandemic was well started, a particularly long period of fine weather occurred. More important, perhaps, the weather also precipitated a large amount of other respiratory infections, such as always become prevalent at this season. There is little doubt that many of these cases have been mistaken for influenza.

The epidemics which occurred in the spring of 1918 were like those that took place in the fall, except that the disease was milder and there was less pneumonia in the spring. Until the late summer the influenza reported from Europe was of a relatively mild type. It seems to have been as infectious there as it is here. Reports coming from all parts of Europe indicate that the percentage of persons attacked was about the same as in America.

IMPORTATIONS OF A VIRULENT STRAIN

The origin of the influenza pandemic now sweeping the world is usually attributed to Spain. It is doubtful, however, whether the disease was first seen in Spain or the United States. Some have held that it was brought to the Western hemisphere from China.

Early in the spring of 1918, a disease of unknown origin is reported to have appeared in Spain with the symptoms of sudden onset, severe headache, pain in the back, fatigue and perhaps nausea. After three or four days the patient recovered. Influenza appeared in America early in March, being reported from Fort Oglethorpe, March 18, and from some other parts of the United States much earlier.

In the latter part of March the disease appeared in the American Expeditionary Force, in the French and British army, and in the civil population. About 25 per cent. of all who were exposed to the disease were attacked. The death rate was low. The first cases in Germany were among troops that fought with a (presumably infected) American regiment in July.

In September, the disease assumed a more serious character, being complicated with bronchopneumonia and septic pneumonia with a high mortality in some epidemics. The disease is said to have become more severe in Spain as the season advanced.

The first that was seen of the highly virulent infection in America was among shipping. During July and August a number of vessels plying between Europe and America experienced intense outbreaks of what was called "Spanish influenza." That patients with the disease were being brought into the country in this manner was stated in the daily press and in official reports in July.

Many patients were admitted to various ports of the United States from ships during June, July and August. The Navy has pointed out that the British steamship *Exeter,* which arrived from Liverpool, at Philadelphia, June 22, reported at quarantine that twenty-seven Lascars and an English quartermaster were ill with pneumonia. These patients, who were described as in a desperate condition, were removed to hospital. The opinion was reached that they had influenza.

July 7, the New York papers described an outbreak of "Spanish influenza" which had occurred on a troop ship returning to America. The vessel was compelled to put back into port, there not being enough of her crew left to handle her. This vessel was the Cunard Liner *Khiva,* which had left Liverpool, June 15. Six days later six of the crew were taken suddenly ill. Two days later the number was increased by fifteen. Next day there were fifteen more cases. The ship then, pursued by a submarine, put into Halifax. Ten days later it proceeded to New York. There were no deaths.

August 18 and subsequently, the New York papers described outbreaks of influenza on the *Rochambeau* and the *Nieuw Amsterdam.* On one of these vessels, twenty-one cases of influenza had occurred. Some of them developed pneumonia and were sent to St. Vincent's Hospital. According to the New York *Times* of July 18, 1918, influenza had been coming to New York on vessels since the early part of June.

According to a Navy bulletin, two steamships from Norway and one from another Scandinavian port arrived in New York, August 14 and 15, having a number of patients ill with influenza.

The Surgeon-General of the United States Public Health Service reported a sharp outbreak at Fort Morgan, near Mobile, Ala., during the month of August. At the same time a steamship arrived at Newport News with substantially the entire crew infected. The *Bergensford,* which arrived in New York, August 12, had during the voyage 200 cases of influenza.

The foregoing, which makes no claim to being a complete list, is sufficient to show that influenza was brought to the United States and to various ports on vessels from Europe through the whole summer. In some outbreaks there was a great deal of a fatal pneumonia.

The patients from the vessels were sent ashore and soon mingled with the civilian populations. There were thus scattered rather widely along the Atlantic seaboard sparks from which the pandemic not improbably arose. How abrupt were the appearance and spread is not yet perfectly clear. In arriving at an understanding of this point it is necessary to distinguish between the sudden appearance of the disease and its sudden recognition.

There is another and less definite explanation of the pandemic offered. It is less an explanation than a guess. The same kind of guess probably has been made ever since epidemics first visited the earth. It is that the marked virulence noted in the recent pandemic is due to the weather. The supposition is that in some way not determined, the mild influenza of last spring became greatly intensified this fall.

That the disease appeared suddenly in the camps and ran a meteoric career is clear enough. Evidence presented in Table 12 indicates that its appearance and course in civil life was somewhat the same. This table, compiled partly from data supplied by the Census Bureau, shows the dates when marked increases occurred in the number of deaths from pneumonia in cities and camps in various parts of the country. From the table it would appear that the increase in the incidence of pneumonia among the principal cities of the United States preceded the increased incidence among the Army camps. If this is so, it is to be inferred that the camps derived their infection not from one another but from their immediate environment.

TABLE 12.—MARKED INCREASES IN DEATHS FROM PNEUMONIA IN THE PRINCIPAL CITIES AND ARMY CAMPS IN THE UNITED STATES FOR THE PERIOD FROM SEPTEMBER 8 TO OCTOBER 25, INCLUSIVE

Date Week Ending	Atlantic Coast		North Central		Southeastern		Southwestern		Pacific Coast	
	Cities	Camps	Cities	Camps	Cities	Camps	Cities	Camps	Cities	Camps
Sept. 14	Boston									
Sept. 21	Lowell New York	Devens Dix								
Sept. 28	Cambridge Worcester Jersey City Philadelphia *Providence* *Washington*	Lee Upton Syracuse Humphreys	Pittsburgh Chicago Minneapolis							
Oct. 5	Baltimore Buffalo Fall River Newark Richmond Syracuse	Meade Hoboken Eustis Newport News	Cincinnati Indianapolis	Custer Funston Grant Sherman Taylor	*Birmingham*	Beauregard Sevier *Logan* Hancock Gordon	*Denver*	*Pike*	*Los Angeles*	
Oct. 12	Albany Rochester		Kansas City Louisville Milwaukee Omaha St. Paul St. Louis	Dodge	Atlanta New Orleans	Greene McClellan Wadsworth Jackson Johnston Greenleaf		Travis Bowie	*Oakland* Seattle	
Oct. 19	New Haven		Cleveland Columbus Dayton Toledo			Sheridan		MacArthur Cody	San Francisco Spokane *Portland*	Fremont Lewis

This table shows how the pandemic spread across the continent. Both cities and camps in the Atlantic Coast groups were included. The states of Massachusetts, New York, New Jersey, Maryland and Virginia were attacked first. The first record of the spread of the pandemic near this group was the increased pneumonia death rate at Pittsburgh, Chicago and Minneapolis, cities of the North Central group, during the week ended September 28.

During the following week (ended October 5) pronounced epidemics occurred in five of the Army camps of the North Central group (Custer, Funston, Grant, Sherman and Taylor). During this week epidemics were reported by both cities and camps in the Southeastern and Southwestern groups, and in the city of Los Angeles of the Pacific Coast group.

It was two weeks later (week ended October 19) that the camps of the Pacific Coast group reported the *first marked increase in deaths from pneumonia.*

Table 13 gives the number of deaths from pneumonia reported in forty-six cities from September 14 to November 2. It shows the rise and progress of the pneumonia, and, so far as that *disease is the shadow* of the influenza, it affords evidence of the case incidence of the whole pandemic of the larger cities. No reliable evidence of the prevalence of influenza in the cities exists. This statistical table is based on figures contained in a special report of the Bureau of the Census, Washington, D. C., on deaths from pneumonia, and appended to the regular weekly report of that bureau for the week ended Nov. 2, 1918.

The special report covers the eight weeks period from September 8 to November 2, inclusive. Marked increases in the incidence of pneumonia deaths in the different cities are indicated by the totals for the week being printed in boldface. A weekly incidence which is more than double the average weekly figure for not less than two weeks preceding (when these figures are available) is considered a marked increase in this memorandum.

COMPARISON WITH OTHER PANDEMICS

It is interesting to compare the present pandemic with others, but the comparison cannot be close. It is impossible to say how severe were some of those which are recorded in history for the reason that statistical data concerning them are meager and imperfect. It is said that in 1889-1890 no less than 25 per cent. of the population was attacked in London; 33 per cent. in Antwerp; 39 in Massachusetts, and 50 in Paris. In 1823-1833 about 40 per cent. of the population of Paris is believed to have been affected. In 1872, three quarters of the population of London and some German cities were supposed to have suffered. The records of earlier visitations are more obscure.

In the 1918 pandemic, about 20 per cent. of the soldiers in the camps were attacked. This seems rather a large proportion for the whole country or, indeed, for the cities, and yet it may not be far amiss. By the time the disease has finally disappeared, it will have spread somewhat beyond its present limit; and if the patients that recovered in the Army are added to those of the full pandemic, the proportion of the whole population affected during this year will be found to have been still greater.

The total number of deaths resulting from the present pandemic will never be known. Observers of pandemics in other years have pointed out that influenza is a more fatal disease than is commonly understood, the unsuspected excess being due chiefly to lung and heart complications that do not promptly manifest themselves. Thus, although the number of deaths directly attributed to influenza in England and Wales in 1890 was reported as 4,523 per million, the registrar general, by analysis of the vital statistics for the period, stated that the number of deaths directly or indirectly attributable was 27,074 per million, or nearly seven times the apparent rate. In London the general death rate was increased by more than 20 per cent., in Berlin by more than 60 per cent., and in Paris and Brussels by more than 100 per cent.

TABLE 13.—DEATHS FROM PNEUMONIA REPORTED BY THE PRINCIPAL CITIES OF THE UNITED STATES FOR THE PERIOD SEPT. 8 TO NOV. 2, 1918, INCLUSIVE

City	Week Ended							
	September			October				Nov.
	14	21	28	5	12	19	26	2
Albany	2	0	2	2	11	22	34	24
Atlanta	7	.....	4	7	25	42	86	
Baltimore	7	5	19	87	371	793	600	204
Birmingham	2	2	4	11	9	12	19	15
Boston	27	93	175	225	177	126	52	38
Buffalo	8	12	16	41	93	125	134	90
Cambridge	7	4	23	27	15	13	4	6
Chicago	15	24	74	246	476	843	826	456
Cincinnati	5	4	6	15	20	21	19	14
Cleveland	5	8	10	15	22	64	106	153
Columbus	1	4	6	10	13	28	21	9
Dayton	1	1	2	5	11	38	43	31
Denver	3	3	8	19	25	19	34	19
Fall River	0	5	6	11	9	23	10	
Grand Rapids	2	1	1	3	7	6	15	
Indianapolis	3	6	10	24	16	110	97	
Jersey City	2	6	21	50	144	225		
Kansas City, Mo.	5	.....	10	11	21	55	75	55
Los Angeles	9	.....	2	14	41	31	49	53
Louisville	3	9	4	14	77	154	157	60
Lowell	1	8	16	64	104	85	65	19
Memphis	.....	.....	.....	.....	67	152	127	60
Milwaukee	4	5	13	15	54	83	126	90
Minneapolis	2	.....	11	13	11	10	22	
Nashville	2	.....	3	5	29	47	27	13
Newark	0	6	6	22	70	126	137	138
New Haven	0	2	4	6	9	22	29	
New Orleans	5	.....	3	17	49	177	233	117
New York	74	98	145	434	1,142	2,099	2,251	1,855
Oakland	4	0	2	3	11	21	27	
Omaha	1	.....	2	7	22	22	7	
Philadelphia	20	32	76	207	938	1,644	1,182	467
Pittsburgh	12	17	33	57	102	161	457	537
Portland	4	.....	3	3	8	25	11	16
Providence	4	10	22	38	61	62	48	32
Richmond	4	2	3	20	42	73	43	
Rochester	1	1	7	6	22	25	28	33
St. Louis	12	13	20	25	46	76	75	87
St. Paul	3	.....	3	1	30	11	10	
San Francisco	6	14	15	15	19	42	58	59
Seattle	4	2	4	6	16	22	7	17
Spokane	2	.....	1	1	2	5		
Syracuse	0	.....	.....	14	3	50	32	
Toledo	2	0	5	3	7	19	43	41
Washington, D.C.	10	.....	17	57	101	96	61	35
Worcester	7	9	38	68	53	38	22	14

No records now available show that there has ever been so much immediately fatal pneumonia as in the present pandemic. If to the known deaths are added an allowance based on the registrar general's estimate quoted above, the magnitude of the catastrophe appears truly appalling. Both in and out of the camps there will have been fewer cases of influenza and far more deaths than the records indicate. The cases will be overestimated — the deaths will not all be told.

BARRACK LIFE AND RESPIRATORY DISEASE

SOME EPIDEMIOLOGIC OBSERVATIONS ON THE RECENT OUTBREAK OF INFLUENZA *

VICTOR G. HEISER, M.D.
NEW YORK

The influenza epidemic through which we are passing has been responsible for 17,000 deaths among our troops in this country, and the toll among the civil population already exceeds 200,000 lives. This is a far greater disaster than has befallen the United States in many decades. We have come to look on the war in Europe as one of the greatest destroyers of human life in the history of mankind. Yet in the brief space of a few weeks more deaths have been caused by an acute disease than have occurred on all the battlefields in any similar period, notwithstanding that millions on millions of soldiers have been involved.

Among the civil population of New York, 50 per cent. of all deaths occurred between the ages of 25 and 45. From figures obtained from Boston, Philadelphia, Baltimore and other sources, it can be predicted that similar percentages will probably obtain in many other communities. The deaths in cities among the sexes appear to be about equal, although there was a slight excess among females in Boston. Thus, 100,000 persons between the ages of 25 and 45 have succumbed to respiratory disease. This means that we have already lost among civilians 50,000 men in the prime of life. This is a serious drain on our man power.

Viewed from another standpoint, it is apparent that it is more dangerous to be a soldier in peaceful United States than to have been on the firing line in France. From the statistics so far available, the death rate in the military camps is higher than among the civil population, even in similar age groups. The mortality in New York and Chicago, for instance, shows that the death rate in the Army is more than double that of the civil population of the same age group. There is also the possibility that when allowances are made for the fact that defectives have been eliminated from the Army, and that these poor "risks" swell the civil death list, the corrected margin will be still further increased in favor of the civil population.

A study of the Students' Army Training Corps and of vocational students shows that as living conditions approach those in the Army, so does the death rate approach that of the Army. Further observation shows that with few exceptions the mortality rate from influenza and pneumonia bears a very close relationship to the number of persons housed and living under barrack conditions. That is, when large numbers of persons live, sleep and mess together in one room, the death rate is almost invariably higher than among similar groups living under civilian conditions. In other words, the more nearly the housing, eating and congregating conditions in the Students' Army Training Corps resembled those which obtain normally at colleges or such as exist in civil communities, the death rate was correspondingly lower. The death rate among college students living in their customary way was about the same as that of the towns in which they were located.

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* The data assembled in this paper are based on reports to Nov. 9, 1918, but subsequent deaths are more likely to emphasize the difference between civil populations and "barrack" populations than otherwise.

Men in the military camps of the United States are housed in barracks with a capacity of from fifty to 150 men in a room. Assuming that the total number of troops did not reach over 1,500,000, and that 17,000 deaths have occurred, this gives a death rate of 11 per thousand for the period of the epidemic. For instance, in Boston, which is one of the cities hardest hit by the epidemic, 591 deaths are reported in the male age group of from 20 to 30. The United States Census Bureau estimates that in this age group there are 78,524 males. This would give a death rate of 7 per thousand. The death rate among all ages in Boston from the beginning of the epidemic until November 2 was 5 per thousand. Figures from Washington and Baltimore show that approximately the same proportion obtained. In the majority of Western cities the civil mortality has been very much lower than in the large Eastern cities. In Chicago the rate among the male age group of from 20 to 30 was 4 per thousand, or about a third of the Army rate. It will thus be seen that the death rate among the troops has been two or three times as great as that among civil populations of similar age groups. It is noteworthy that in many of the large Western cantonments the death rate was as high as in Eastern cantonments, and even higher, so that climatic influence does not explain why the Western cities suffered less than the Eastern cities.

TABLE 1.—DEATH RATES AMONG GROUPS OF INDIVIDUALS HOUSED UNDER BARRACK CONDITIONS

Organization	Population	Deaths	Rate per 1,000
Michigan Agricultural College	1,600	12	7.5
Wisconsin University vocational students:			
First group	600	6	10.0
Second group	550	6	10.9
Minnesota University:			
Fort Snelling group	4,985	54	10.8
Vocational group	4,000	72	18.0
Feebleminded institution, Orient, Ohio	600	35	58.3

The death rates at representative colleges where vocational students and the Students' Army Training Corps were housed in barracks are as follows: At the Michigan Agricultural College, which has 1,600 students, there were twelve deaths, or 7 per thousand. On the other hand, among 3,100 students at the University of Wisconsin, of whom only a small percentage were housed in barracks, the death rate was only 3.8 per thousand. In the same university, however, among 600 vocational students who were housed in approved Army barracks, there were six deaths, or a rate of 10 per thousand. The same experience was repeated at Wisconsin in a second group of vocational students. At the University of Minnesota we have the Fort Snelling group, which consists of the students of the university, the hospital attendants, and the guards, the great majority of whom live under barrack conditions. In this group of 4,985 there were fifty-four deaths, or a rate of 10 per thousand. Among the 4,000 students in the vocational group at the University of Minnesota there were seventy-two deaths, or a rate of 18 per thousand. These men were housed in a big automobile building of many stories, and they slept many hundreds in a room. In accordance with previously accepted standards of cubic air space, floor area and ventilation, the conditions were good. At the institution for the feebleminded at Orient, Ohio, among 600 inmates who were housed from twenty-four to 160 in a room, there were thirty-five deaths, or a rate of 58 per thousand.

TABLE 2.—DEATH RATE AMONG SIMILAR AGE GROUPS IN CIVIL COMMUNITIES

City	Population Male Age Group 20 to 30	Deaths Influenza Pneumonia	Rate per Thousand
Philadelphia	176,137	1,558*	8.8
Baltimore	59,965	461*	7.7
Boston	78,524	591†	7.5
New York	573,749	2,420*	4.2
Chicago	259,668	1,035*	4.0
Milwaukee	56,685	61*	1.1
Army	1,500,000	17,000	11.0

* Number estimated from United States census returns up to Nov. 9, 1918.

† Boston City Health Department, up to Nov. 2, 1918.

It is proper to mention that there were many Students' Army Training Corps at a number of the colleges where a large percentage of the students were housed in barracks, and either no deaths occurred or there was a very small percentage. But it is also true that in such instances pneumonia was usually not introduced. Similar conditions, of course, obtained among the Army camps. The rate varied from the very low rate at Camp Wheeler, for instance, to camps like Sherman, where the rate reached 30 per thousand, so that the conditions of comparison between the military and the civilian population in this respect still remains the same.

From the accompanying tables the lower rate among civilians will at once be apparent. It has long been recognized that quartering men in barracks involves considerable risk of a high mortality from respiratory diseases. Classical examples are those among the men quartered in barracks in Panama and among the miners similarly housed in South Africa. The 10,000 or more deaths that occurred from pneumonia among our troops last winter is further evidence. The high mortality rate in the Great Lakes Training Station furnishes another excellent example. Experience among the members of the Students' Army Training Corps who were quartered in barracks or under semi-barrack conditions in the recent epidemic of influenza shows a higher death rate. It is most interesting to observe that these high death rates occurred in barracks where the cubic air capacity and the square floor area approximated the standard set for approved barracks, namely, a minimum of 500 cubic feet of air space and 50 square feet of superficial floor area per person, and that on the whole the ventilation was good.

TABLE 3.—DEATHS AMONG ALL AGES IN A NUMBER OF TYPICAL CITIES

City	Population	Deaths* Influenza Pneumonia	Rate per Thousand
Milwaukee	453,381	614	1.4
Indianapolis	289,577	427	1.5
Los Angeles	568,495	1,214	2.1
Louisville	242,707	610	2.5
New York	5,737,492	19,357	3.4
Providence	263,613	994	3.8
Boston	785,245	4,355	5.5
Baltimore	599,653	3,685	6.1
Philadelphia	1,761,371	12,665	7.2

* United States Census Reports up to November 9, 1918.

It is my purpose in this paper to note the mortality rates among groups of peoples housed under different conditions. No explanation will be attempted as to why death rates are higher among persons housed in barracks. However, it may do no harm to point out that experience based on laboratory investigations in our Army hospitals shows that in large wards the bacterial flora in the throats of the patients tended to become equal. In other words, when individuals were admitted who had different bacteria in their respiratory passages from those already in the ward, these organisms could soon be found in the others. The facts reveal a lower mortality among those housed one or two in a room. However, there may be other factors involved. For instance, in large Philippine prisons it has been the custom for the past ten years to disinfect the mess kits and hands before eating, because there was much reason to believe that it reduced the disease incidence.

In view of the present high state of infectivity of respiratory diseases, it is not unreasonable to assume that unless better housing conditions are provided wherever men live in barracks, a morbidity and mortality rate will obtain approaching that of the Army quartered in barracks last winter. One might well be led to ask, Is there a military or other emergency that would justify so great a sacrifice of life? It must be remembered that in addition to the humanitarian consideration, a heavy economic loss will be encountered. The college man in the Students' Army Training Corps, for instance, represents the period of life at which the greatest outlay has been made, with scarcely any return on the investment of education. Soldiers and workmen are great financial assets. But there is even a more serious factor to be considered. Men living in barracks are widely scattered throughout the United States, and many groups are in intimate relationship with our large, populous centers, to which they will, unless corrected, transmit dangerous communicable diseases like pneumonia, cerebrospinal meningitis, septic sore throat, diphtheria and measles, thereby becoming a serious menace to the health of the civil community. Thus, much preventable and unnecessary disease would be caused. It would seem well to consider plans for "debarracking" aggregations of men throughout the United States. As matters stand, those responsible for retaining men in barracks are assuming a heavy responsibility.

SUMMARY

1. Experience in this country since the war began has shown that soldiers who live under barrack conditions have a high morbidity and a particularly high mortality rate from respiratory disease.
2. The mortality rate among the Students' Army Training Corps in the recent outbreak of so-called influenza was higher than among students who lived under prewar conditions.
3. Civilians throughout the country had a much lower mortality rate than soldiers in cantonments and students in barracks at colleges and universities.
4. Other conditions being equal, the mortality was higher among groups of men who slept many in a room. There may have been other factors responsible than sleeping in the same room, as, for instance, infection through close contact at meals, infected mess kits and hand infections.
5. The high infectivity from respiratory disease at the present time makes it justifiable to require men to live under barrack conditions only in cases of extreme emergency.
6. Patients with different respiratory infections should not be quartered in the same ward or room, even in the presence of heretofore accepted standards for ventilation. If emergency conditions make such a course necessary, patients and attendants should when practicable wear approved masks or be otherwise protected.
7. Finally, sanitary art has not arrived at the point at which it can adequately safeguard the lives of men against respiratory disease who live under barrack conditions.

MUSTARD (YELLOW CROSS) BURNS

LEONARD D. FRESCOLN, M.D. (PHILADELPHIA)
Major, M. C., U. S. Army
FRANCE

Recent attacks have shown that instead of the former gas cloud offensives being employed, the so-called "mustard gas" shells have been used to play an important part in annoying the enemy. A burn of either the first or the second degree with some of the retained irritant is produced. The liquid may be splashed on the part or the vapor reach the skin sufficiently to produce a redness and some hemorrhage. The real burn may be suspected but not appear until twenty-four hours.

This irritant is called in German literature by several names, and "yperite," or dichlor-ethyl-sulphid chemically. It vaporizes on the explosion of the shell and then does the damage to those exposed, but its effect is not much appreciated before four hours. Besides the skin manifestations there may be, after a day, vomiting, cough, hoarseness and pain. The eruption itself may appear as punctate, rose-red areas, simulating a vesicular eczema, or at times desquamation. The fluid contents may coagulate and become infected. Moreover, the fluid sometimes spreads, and there can be quite a large area of burning and itching. Ulcers sometimes form and persist for six weeks. As a rule, pigmentary changes result. Only rarely is there loss of hair; this is seen best in the lower animals.

Some individuals seem more susceptible to its severity than others. Occasionally a physician handling the patients will be infected from the contents of the blebs. Those who are sweating profusely are liable to suffer a nettle rash eruption. Furunculosis results at times. The chemical seems to be absorbed through the layers of the skin. A splash into the eye may destroy this organ, though this has occurred rarely, but the fumes merely inflame and at most cause linear scratches on the cornea made visible by 1 per cent. fluorescein.

Two things are important in combating this cruel weapon: First, to recognize early any suspicion of the irritant and protect against it, and second, to administer on the field first aid correction and prevent involvement of others. One should insist on the immediate application of masks, covering well exposed parts, and withdrawal from the immediate neighborhood, remembering to discard as much as possible all things contaminated. The best way to alleviate parts attacked is to have ready a 2 per cent. sodium bicarbonate solution for the eyes and throat and a 2 per cent. chlorinated lime preparation for the skin and neutralize quickly, for this cannot be used efficiently later any more than an acid burn can be thus treated long afterward. In fact, the lime will later irritate the exposed derm. Aromatic spirits of ammonia may be inhaled, or 2 per cent. sodium thiosulphate and 0.5 per cent. sodium bicarbonate (German method) used as a spray for treating the upper respiratory tract. Complete rest should be given in marked cases as in other gas cases, and plenty of ventilation provided. If severely affected patients have been brought from dirty holes or trenches, I would advise a dose of tetanus antitoxin. In emergencies a lather of soap is placed on exposed parts of the body. Further treatment is that of an ordinary burn, the aseptic opening of blebs, care being taken not to allow the contents to touch other parts of the skin. Five per cent. sterile boric acid ointment is a good dressing covered by sterile gauze pad and bandage, or 10 per cent. sodium bicarbonate ointment. The eyes are washed with solution of boric acid and covered, and the lids protected for some time with bland yellow mercuric oxid ointment and fear of further injury dispelled. Later dusting powder of bismuth and zinc oxid, or of zinc stearate will prove satisfactory for abraded skin areas.

Dugouts and holes where a person is likely to sit are to be suspected and carefully evacuated by an attendant wearing oil canvas protection. Then chlorinated lime is scattered in places suspected. Articles of salvage and waste should always be held under suspicion of being contaminated. The clothing is soaked in several changes of water at 70 C. Instead of strong alkaline remedies, potassium permanganate, 0.05 per cent. solution, is recommended, or a 0.1 per cent. zinc chlorid, and between the fingers or folds of the scrotum, a weak silver nitrate solution. In advanced respiratory cases, oxygen inhalations are used.

Owing to the censorship, the photographic reproduction of many interesting cases is not permissible. These cases should be given careful attention, and after treatment one need not necessarily excuse patients with mild skin burns from duty.

EFFECTS OF THE INJECTION OF EPINEPHRIN IN SOLDIERS WITH "IRRITABLE HEART"

PRELIMINARY NOTE

FRANCIS W. PEABODY, M.D. (Cambridge, Mass.)
Major, M. C., U. S. Army
HARRY D. CLOUGH, M.D. (Providence, R. I.)
CYRUS C. STURGIS, M.D. (Pendleton, Ore.)
JOSEPH T. WEARN, M.D. (Boston)
First Lieutenants, M. C., U. S. Army
and
EDNA H. TOMPKINS
LAKEWOOD, N. J.

On account of the general interest that has been aroused in the clinical syndrome originally described by Da Costa as the "irritable heart of soldiers," it has seemed to be advisable to present in the form of a preliminary note the observations recorded herein. No broad conclusions are as yet drawn from them. The investigations are being continued, and they will be published in detail later, when the work on the various sections is completed.

PHYSIOLOGIC ACTION OF EPINEPHRIN

In spite of the large amount of clinical and experimental work that has been done on the physiologic action of epinephrin, and on the effect of its injection into the human and animal body, our knowledge of the subject is still very far from complete. There are, indeed, not a few points on which rather fundamental differences of opinion exist among competent investigators. Nevertheless, one fact appears to be quite definitely established, and from the standpoint of the present study this is perhaps sufficient to provide a basis on which to interpret the results. Broadly speaking, epinephrin acts as a stimulant to the sympathetic nervous system.

METHOD

The method adopted was that devised by Goetsch[1] and used by him especially in the study of thyroid disease. The patient lies quietly on a bed for at least an hour. Observations are then made on the systolic and diastolic blood pressure, pulse rate and respiration rate. Notes are also made on the presence of and degree of tremor, sweating, temperature of hands, pulsation of vessels (peripheral and abdominal), and general nervousness. When the blood pressure, pulse and respiration rates are found to be constant for several observations made at five-minute intervals, an injection of 0.5 c.c. of 1 : 1,000 solution of epinephrin (Parke, Davis & Co. adrenalin tablets freshly prepared) is made into the deltoid muscle. Records are then taken of the systolic and diastolic blood pressure, pulse and respiration rates every two minutes for ten minutes; then every five minutes for one hour, and then every ten minutes for half an hour. At the same time any changes in the symptoms mentioned, or the appearance of new symptoms, is noted. The dosage of epinephrin appears to be well chosen. A large dose would probably produce symptoms in almost every one, but this small amount makes possible the differentiation of a group of persons who may be regarded as hypersusceptible to epinephrin.

A positive reaction to the epinephrin injection consists in the production of a rise in the systolic blood pressure or of the pulse rate of over ten or fifteen points, accompanied by the production of rather typical symptoms, such as flushing, sweating, increased vascular pulsation, increased tremor of the hands and often of the arms, restlessness, and more or less marked general nervousness. The blood pressure may rise 30 or 40 mm. in marked positive cases, and the tendency of the pulse is to follow the systolic blood pressure. Pulse pressure is characteristically increased. Respiration usually increases in depth but not in rate. A moderate rise of blood pressure or pulse rate alone, without the characteristic increase in symptoms, is not regarded as constituting a positive reaction. Slight symptoms may appear in many instances in which a definite reaction is not obtained, and it takes a little experience with positive and negative results to be able to differentiate between the two. The reaction usually begins about twelve minutes after the injection of epinephrin, reaches its climax on the average in thirty-two minutes and is finished in a little over an hour.

CONTROL AND CLINICAL OBSERVATIONS

Some difficulty was found in selecting suitable subjects for control observations. Persons merely in good health while leading a more or less normal life could hardly be used for comparison with a group of men who had developed symptoms while under nervous and physical strain, for one could never be sure exactly how the controls themselves would survive under similar circumstances. Thus, for instance, the hospital medical detachment could not be used, as it contains many men who are assigned to it for the very reason that they are not fitted for the strain of full duty. It seemed necessary, therefore, to look for controls in an organization that had been doing full duty for a considerable period. Such men were found in the 109th Sanitary Train, then at Camp Dix. This had been in active training for nearly two years, and the men were in the finest physical condition. With the permission of the division surgeon and the commanding officer, epinephrin tests were made on twenty-seven men picked at random from a group volunteering for the purpose. One man gave a slight suggestive reaction, but in no instance was a typical reaction observed.

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[1] Goetsch: Personal communication to the authors.

The clinical observations to be reported at present comprise those made on a group of sixty-five soldiers representing what may be termed the "constitutionally inferior" type of patient with "irritable heart." Those in whom the symptoms date from a recent infection, and those in whom symptoms developed only after some unusual physical or nervous strain after they had done full duty in training for a considerable period, are excluded. There remains a group of patients giving a clinical picture which is essentially the same in all the cases. It is, moreover, a type of man that is being seen very commonly in the camps in this country at the present time. These patients usually give a history of being "weak" or "easily exhausted" for many years; of having always "favored" themselves, and having avoided "overexertion" often at the solicitation of relatives or on the advice of a physician. Often they have been told they have a "weak heart." They have always done "light" work, have usually "lost much time," and are fairly well contented in a low economic grade. Among their symptoms are nervousness, fainting, vertigo, dyspnea, palpitation and precordial pain on slight exertion. Perhaps the most fundamental symptom, however, is a tendency to become fatigued easily. They have little ambition or "push," and are usually without much self-confidence. They are often introspective or neurotic, and try to evade physical and mental exertion. In civil life many of them belong to the vague group of neurasthenics, but they get along fairly well for they are able to adapt their lives to themselves. When they are brought into the Army they are forced to adapt themselves to a wholly abnormal life—a life of physical and nervous strain—and they fail. Perhaps the most characteristic feature of the whole group is the fact that while the length of their Army service may be months, the period they have done full duty is usually measured by days. Under the strain of drill and hikes they fall out and report to the hospital with symptoms resembling those seen in organic heart disease. In spite of the fact that on physical examination, except for an instability of rate, the heart is normal, they are usually classed among cardiac patients, and the diagnosis "cardiac disease, functional" is made.

Of sixty-five patients in this group, the epinephrin test was positive in thirty-nine (60 per cent.), doubtful or suggestive in six (10 per cent.), and negative in nineteen (30 per cent.). In considering these results one must accept the fact that the clinical group dealt with does not necessarily represent one single clinical entity. There is no reason to suppose the etiology of the symptoms is in all cases the same. It is distinctly interesting, therefore, that so large a proportion should be hypersensitive to epinephrin, and one should at least consider carefully whether an unusually excitable sympathetic nervous system may not play a part in determining their condition. When one compares this group with its positive epinephrin reaction to the group of thoroughly trained soldiers in whom no definite reactions were obtained, the contrast is certainly striking.

BASAL METABOLISM

The effect of the injection of epinephrin on the basal metabolism has been studied in persons giving a positive reaction, and in others in whom no reaction was obtained. The expired air was collected for the periods of nine or ten minutes in a large Tissot spirometer, analyzed, and the heat production calculated from the oxygen consumption and respiratory quotient. The results were compared with the standards given by Du Bois and his associates at the Russell Sage Institute of Pathology. One or two periods were taken before the injection of epinephrin, and one, two or three periods following the injection. In six patients who did not give reactions to epinephrin, there was a rise of metabolism after the injection of epinephrin amounting to between 3 and 11 per cent. Following this there was a fall in metabolism to from 3 to 11 per cent. below the initial normal figure. In sixteen cases showing a positive reaction to epinephrin the rise in metabolism amounted to from 15 to 32 per cent. This was followed after the reaction was over by a fall in metabolism to a point from 3 to 5 per cent. below the initial metabolism before the epinephrin was injected. An injection of salt solution produced no increase in the metabolism in a patient who subsequently showed a rise of 29 per cent. after the injection of epinephrin. The epinephrin caused an increase in the metabolism of more than 20 per cent. in thirteen of the sixteen cases. Epinephrin seems to cause a rapid rise in metabolism, reaching its maximum at the height of the reaction and then falling off rather quickly. The rise in metabolism closely parallels the rise in blood pressure. In the majority the increase of metabolism was associated with a rise in the respiratory quotient.

BLOOD SUGAR DETERMINATIONS

In fifteen cases—seven sensitive to epinephrin and eight negative—blood sugar determinations were made. Three specimens of blood were obtained for analysis, one before the injection of epinephrin, a second from thirty to forty minutes later, an endeavor being made to obtain the blood at the height of the reaction if the patient was epinephrin-sensitive, and a third an hour and a half after the giving of the epinephrin. In each patient following the epinephrin injection the blood sugar was increased, the epinephrin-sensitive cases showing a greater increase than the negatives. The results so far are: Average blood sugar rise in seven epinephrin-sensitive cases, 0.044 per cent.; average blood sugar rise in eight epinephrin-negative cases, 0.028 per cent.

ELECTROCARDIOGRAMS

Electrocardiograms were taken in twelve cases before the injection of epinephrin, at approximately the height of the reaction and after the reaction was finished. At the height, ten of twelve patients noted symptoms, such as dizziness, blurred vision, palpitation and precordial pain, that bore a close resemblance to the symptoms prominent in their histories. The most constant change found in the electrocardiograms was a slight decrease of the height of the T-wave. This always occurred in one lead, usually in two leads, and sometimes in all three. It was most marked in the second lead. In individual cases other abnormalities were seen, as increase of a sinus arryhthmia; inversion of the P-wave; prolongation of the P-R interval, and partial heart block; inversion of the T-wave, and the production of ventricular extrasystoles.

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SATURDAY, DECEMBER 7, 1918

A SPANISH EDITION OF THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

In a communication to the Editor last March, President George E. Vincent of the Rockefeller Foundation suggested that the publication in Spanish of The Journal of the American Medical Association—thus making it available to our colleagues in Central and South America and elsewhere—would be a great achievement, for promoting both scientific medicine and better international relations. The subject was brought before the Board of Trustees of the American Medical Association at the meeting in Chicago last June. The Board gave the matter very favorable preliminary consideration, and ordered that an investigation be made and further facts presented, so that final action might be taken at a later meeting. The matter was again considered at a recent meeting of the Board, with the result that the publication of a Spanish edition of The Journal was authorized.

The question of establishing closer relationship with the Central and South American republics, Mexico, Cuba, the Philippine Islands, etc., has long been regarded as an important one. The Pan-American Union has been developing this spirit of friendship and cooperation for many years. While business and commercial relations have been developing very rapidly, thus far the scientific men of the United States do not seem to have appreciated the opportunities and the benefits that would result through mutual exchange of views and ideas and of the results of research and investigation. The medical problems of Latin America always have been essentially the same as ours; we have only to recall the comparatively recent epoch-making work of Finlay, Reed, Gorgas, Guiteras, Liceaga and Cruz on yellow fever, of Ashford on hookworm disease, and of Strong on verruca peruana to show how identical are our interests in this field, and how much is to be gained by making each other acquainted with what we are doing and what we have already done. Our colleagues to the south of us have been looking more to France and Germany than to this country for their medical literature, and their medical students were more likely to go to those countries than to this for their undergraduate and postgraduate work.

Some weeks ago letters were sent to about two thousand physicians in Central and South America, outlining the proposition of publishing a Spanish edition of The Journal, and asking their opinion as to whether such a journal would be welcome. There has not been time for replies except from Central America and the northern parts of South America; but all of these replies have been enthusiastically favorable to the proposition.

Preparations are now being made for the publication of the initial number early in January. For the time being the Spanish edition will be issued semimonthly. It is proposed to include in it practically all of the scientific matter that appears in The Journal. Original articles and editorials that are of local or very ephemeral interest will not be included, nor will it include the medical news listed under states, marriages, deaths or matter of this character. In a word, everything that may be regarded as of general interest to the new readers, and especially all that is of permanent value, including, of course, the abstracts, Current Medical Literature, and foreign letters, will appear in the Spanish edition.

It needs no prophet to forecast the fact that the relations, always close, between the democracies of North and South America will with every succeeding day become closer and more advantageous on both sides. The better we know each other, the better friends we shall be. Nowhere can this friendship and close relationship be more fruitful than in the field of science, and especially in medical science. It is in this spirit of cooperation and confraternity that the American Medical Association is entering on this enterprise. It may be unnecessary to say that *no* financial gain is hoped for from this publication. If after several years it pays its own way, it will be doing all that can now be expected of it. Rather, it may be said that the enterprise is begun wholly with the spirit of fostering true internationalism and with purely altruistic motives.

THE FUTURE OF THE MEDICAL PROFESSION

Scarcely have we had time to realize that the great war is over when the numerous after-the-war problems present themselves. Reconstruction seems to be the word on every one's tongue, and the term is applied to almost every phase of human activity. There is reconstruction of the wounded, not only in a physical sense, but also in the sense of reeducating the partially disabled along lines that will enable them to become self-supporting; reconstruction of the industries to meet the new problems of finance, transportation, labor, foreign markets, etc.; in fact, conditions have changed so that readjustments along many lines have become necessary. Nor is the reconstruction idea limited to certain activities, for in some countries the fundamental principles of social existence are rapidly undergoing reconstruction. There is so much upheaval going on throughout the world that it is not surprising that the medical profession has received some attention.

The future of the medical profession in England was discussed by Sir Bertrand Dawson in the last Cavendish lecture.[1] It appears that the position of the physician in England is far from being an enviable one and that certain reforms are greatly needed. The physician is overworked and underpaid, and the influence of the profession as a whole in public affairs seems to be practically nil, even when they relate to matters with which the medical man should be the most competent to advise. This is indeed unfortunate, not only for the physician, but also for the community. The present condition of the profession is not the result of the war but the outgrowth of many antecedent conditions, not the least among which is the national health insurance law.

Many physicians who are doing panel work under this law, even with hard work, are unable to earn more than £30 ($150) net a year. While it is admitted that the panels might be made larger and thus yield greater return, this simply reduces the practice of medicine to a question of physical endurance, without regard for brains and ability.

There is much food for thought in this situation for those who without due consideration are urging state health insurance in this country. Dawson's hope for the future of the profession in England lies in a modified form of state medicine. It contemplates the establishment and maintenance by the state of health centers, a health center to consist of a hospital with its out department, social service, etc. The physicians connected with each health center would receive a salary from the state, in return for which they would render medical service at state expense to those of the community who, under the regulations, are entitled to such service. The physicians would not be expected to give their whole time to state work, but would be permitted to have pay patients in the hospital as well as outside, and to receive for their services as the circumstances of the patient may admit, or as their reputation and skill may command.

In certain larger communities there would be so-called "teaching hospitals," with a paid staff, some of the members of which are to be full time, others part time; the younger members of the profession may receive instruction at these institutions, and medical research therein is to be encouraged. The plan contemplates a minister of health, with a council of medical men forming a great state health department.

The general idea of a health center has merit, but the best method of establishing and maintaining it is open to argument, particularly as to the extent to which the state should contribute. The scheme as outlined by Dawson has for its purpose the betterment of the conditions under which the medical profession is laboring in England today. That the adoption of some such plan would be an improvement, at least for the time being, is perhaps correct. The chief criticism, however, which may be made of this scheme is that the betterment of the profession alone is considered; but no lasting improvement can be hoped for that does not take into consideration the community as a whole. It is a problem of society, not simply a problem of a class. The analysis of the deplorable conditions of the profession does not go deep enough into the causes, and unless the causes are recognized and remedied, little permanent improvement will result.

DEMOBILIZATION AND VENEREAL DISEASES

The prospect of demobilization of more than 4,000,000 troops presents a large sanitary problem, especially as regards the venereal diseases. The situation offers a unique opportunity for influencing the spread of these diseases in this country. If proper action can be taken so that every soldier with venereal disease can be rendered noninfectious before discharge from the Army, the future venereal disease condition of the country will be greatly benefited. If no successful effort can be carried out to render these men noninfectious before their demobilization, the result, on the contrary, must inevitably be a great increase in the incidence of these diseases. One of the greatest disasters of war is the spread of infections that occurs through the occupation of territory by troops, and even to a greater extent through the disbanding of troops at the close of war. Epidemics following wars have often caused far greater loss of life than have the actual casualties of war itself or diseases occurring among troops during the prosecution of war. This applies particularly to the venereal diseases.

It is clear, then, that a serious epidemic of venereal diseases may befall us if a thoroughgoing, vigorous policy is not pursued in demobilization. Fortunately, it would appear to be comparatively simple to outline a course of action which, successfully carried out, would minimize and probably eliminate this danger, and furthermore, would have an appreciable effect in diminishing the present incidence of venereal infections. The fundamental proposition is that soldiers should not be discharged from the Army as long as they are infectious with chancroid, syphilis or gonorrhea.

The problem of chancroid is a small one, since few cases of this condition or its sequelae occur that cannot be definitely rid of infectiousness in a few weeks.

The practical dangers of syphilis are from the chancre, from mucous patches in the mouth and about the genitals, and from condylomas. All of these can be disposed of in a few weeks under active treatment.

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[1] Dawson, B.: The Future of the Medical Profession, Brit. Med. Jour., 1918, 2, 23, 56.

While there is always some danger of recurrence within the next few months, this danger rapidly diminishes as time elapses. In patients who have been treated vigorously with mercury or with mercury and arsphenamin, the danger from these lesions disappears in from four to eight weeks in most cases, and is almost eliminated within six months after the beginning of treatment. In active cases of syphilis, therefore, a great practical advantage would be gained by holding patients for two months, and their danger to the country would be practically eliminated by delaying their discharge for six months. Any remaining trace of danger could still further be reduced by impressing on uch patients the necessity for further treatment, h of course they should have for their own good.

he incidence of gonorrhea is so great, and its infection so insidious after the disease becomes chronic, that it presents the most important and the most difficult of these problems. There are, however, certain definite, well-recognized criteria by which the infected men may be judged to be free from subsequent danger of infectiousness. These criteria can be met by treatment in many cases in from three to six weeks, in most cases in from six to eight weeks, and the cases are rare that cannot be cleaned up by intelligent, vigorous treatment within six months. Patients with gonorrhea in the Army should not be discharged until they meet these criteria.[1]

The practical difficulties of the general problem are (1) the trouble and expense of holding the infected men while undergoing treatment before discharge, and (2) the danger of these men becoming marked in the minds of their civil acquaintances as being venereally infected by reason of the delay in their discharge. The former is of small importance compared to the great advantage for the civil population which this policy would involve. To send these men back to civil life with their infections uncured would be a sanitary crime. The second of these difficulties would not seem hard to obviate because of the relatively short time necessary to carry out this policy. The American Army from Europe cannot be disbanded in a week after it reaches our shores. Some men will have to be retained in service for a few months. The same facts apply to the men in the various domestic camps. It ought, then, to be possible to detain the venereally infected without disclosing the reason for so doing.

According to newspaper reports, Surgeon-General Ireland proposes to detain men with infectious diseases, including venereal diseases, in accordance with a general policy. It is greatly to be hoped that no considerations of expediency will be interjected to interfere with this enlightened policy.

THE PRODUCTION OF DRUG PLANTS IN THE UNITED STATES

In the early days of the European war this country was brought to a realization of the extent to which it had become dependent on foreign sources for the supply of crude drugs. Much was written about the efforts that should be made to avert the threatened drug famine by seeking unanticipated sources of supply as well as by prompt stimulation of the cultivation of medicinal plants. It was easy for the untutored propagandist to recall "the good old days" when home gardens not infrequently contained a variety of herbs that enjoyed popularity as healing agents and when the fields and forests were recognized as sources of plants of reputed medicinal value. Two or three years ago much was even said about the patriotic duty of growing drug plants.

The existence of a drug crisis after the summer of 1914 need no longer be dwelt on. Now that the prospect of peace permits an unbiased if not unhampered survey of the situation, the medical profession cannot fail to have a serious interest in our prospect and our duty regarding the production of drug plant crops. Two facts of direct import in the matter have been emphasized by an expert of the Bureau of Plant Industry in the United States Department of Agriculture.[1] Owing to the great development of foreign commerce, which made it possible to obtain supplies of most crude drugs from sources where the cost of production was less than in this country, drug cultivation has never become an important branch of agriculture in the United States. In recent years it has been confined chiefly to the production of relatively small crops of plants yielding volatile oils which are in demand for industrial purposes as well as for medicinal use. Furthermore, the problem of marketing drug plants has never been seriously considered here. There are hazards and uncertainties that might lead an enthusiast into early difficulties. Hence, as Stockberger warns, unless closely supervised by some central authority, any extensive movement to grow drugs might easily result in the production of far larger quantities than are needed. This would involve a useless expenditure of effort which might accomplish much good if exerted in other ways.

Out of the large number of plants that yield useful drugs, the list of those suitable for cultivation in this country is not large. Many of them demand tropical or semitropical conditions; others require much experimentation to transfer them from wild states to those of commercial cultivation in new environments. Like so many other problems raised by the war, that of the successful and profitable production of drug plants clearly indicates the need of expert advice and scientific consideration. Peppermint, spearmint, wormwood, wormseed and tansy are now grown commercially, chiefly as a source of volatile oils. Cannabis is produced in the Southern states. The experiments in camphor growing have encountered financial obstacles owing to the large outlays involved. Digitalis is sufficiently abundant as a wild plant in the Western states to allay all danger of a serious shortage. The American requirement of belladonna could easily be satisfied by the yield from 500 acres; and at least one fifth of this was harvested from cultivation in 1917. Recent attempts to produce henbane as a drug crop in this country have resulted in failure.

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[1] The following test of cure of gonorrhea is taken from "The Venereal Diseases," American Medical Association, 1918, price 25 cents:

The man should take vigorous exercise on the day before the one on which the examination is to be made.

He should not urinate for two hours before the examination is made.

Examination should show the following findings:

1. He should have no urethral discharge, or at most a mucopurulent drop at the meatus should be obtained on stripping the penis.

2. If such a drop is found, it must be free from gonococci.

3. In the two glass test, both Glass 1 and Glass 2 must be clear and free from pus shreds. Epithelial shreds free from gonococci may be disregarded.

4. The secretion obtained by massage of the prostate and seminal vesicles must show no gonococci and few leukocytes.

5. Examination with a *bougie à boule* should demonstrate the absence of stricture.

[1] Stockberger, W. W.: Production of Drug Plant Crops in the United States, Yearbook, Dept. Agric., 1917, p. 169.

Perhaps the enforced restrictions of war-time shortage will have had the not undesirable effect of demonstrating that many of the drugs now in use can well be dispensed with. This will be in harmony with the efforts of the Council on Pharmacy and Chemistry of the American Medical Association, which has long insisted that "a considerable proportion of Pharmacopeial drugs and preparations are superfluous or worthless."[2] In the realm of desirable drug plants, haphazard methods of cultivation are quite as objectionable as is indiscriminate dispensing in the domain of therapy. For the production of a dependable supply of cultivated crude drugs of high quality, Stockberger writes, reliance must be placed on well-equipped growers who make the growing of drug plants a special industry, and who have the necessary experience in special methods of plant culture, acquaintance with trade requirements, and knowledge of the influence of time of collection and manner of preparation on the constituents of the drug on which its value depends. If developed along these lines, he adds, commercial drug growing in this country promises to become established on a sound basis for the future, when normal conditions return.

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[2] Useful Drugs, a List of Drugs Selected to Supply the Demand for a Less Extensive Materia Medica, Chicago, American Medical Association, 1916.

Physical Education of the Citizen.—The physical education of its citizens has been left almost to chance by nearly all nations, although physical strength and fitness are very important factors in the work of every one. The play and work of their daily lives, together with a casual indulgence in sports on the part of a few, make up the physical training of the masses. Considering its great value to the nation, it would appear advisable to encourage athletic sports, to provide numerous leaders for the specific purpose of encouraging athletic contests and getting all, even the modest, into the fields, the golf links and tennis courts. The great value of universal military drill in strengthening the physique of the young adult is beyond question.—Dr. P. G. Nutting, *Scientific Monthly*, November, 1918.

Current Comment

THE CHANGING RÔLE OF SUGAR IN THE DIET

The promise of increasing allowances of sugar in the near future to the American housewife will be welcome news to many persons. This does not mean that the enforced war-time conservation of sugar has provoked any unpatriotic utterances or occasioned any serious hardship to our population. Every one who reads must realize, after some months of reduced allowance of this food commodity, that sugar is not an indispensable part of the diet. Equivalent substitutes have found a use so quickly and widely as to awaken admiration for the resourcefulness and intelligent culinary ingenuity of the American woman, who has contributed most effectively in many unheralded ways toward winning the war. The history of the place occupied by sugar has changed from decade to decade since the colonial period. After the Revolutionary War, the estimated consumption of sugar in the United States was only 7.5 pounds per capita. It rose slowly to 8.3 pounds in 1821-1825, and remained there for some time. In the year 1915 the per capita use amounted to 84 pounds. In other words, a century ago the people of this country consumed less than one-tenth as much sugar as they do now. A simple calculation shows that the prewar rate of use represented from one fifth to one seventh of the daily food need expressed in terms of calories, at a cost of 2 or 3 cents. It is evident, therefore, that the significance of sugar in the diet has changed from that of a mere flavoring matter a century ago to one of a staple. Indeed, before the war the retail cost of a year's supply for a family of average size was about $23 for sugar, $36 for flour, and $20 for potatoes, whereas the meat cost possibly $200. The promotion of sugar to such dietary prominence has been the result of the profound economic changes in our national life, through improvements in agricultural, mechanical, commercial and transport facilities. Sugar thus affords a striking illustration of how something at first only psychologically valuable may acquire a larger rôle in the daily regimen.

THE "ACRID PRINCIPLE" OF CERTAIN PLANTS

Among the numerous plants still included in the voluminous modern dispensatories of drugs, there are some that contain an irritant usually described as an "acrid principle." Phytolacca, or pokeroot, affords an illustration. A similar "principle" is believed to account for the acridity of certain plants that have not attained therapeutic dignity but are liable to come into contact with man in some accidental way. It is sometimes stated that these acrid principles are dissipated by drying and by heat. Brown and Anderson[1] of the Pharmacological Laboratory at the University of Minnesota have solved the acridity puzzle for a number of these cases. Being unable to isolate any volatile irritant, they turned their attention to mechanical factors. Plants like the Indian turnip, species of *Callocassia*, skunk cabbage and pokeroot contain abundant raphides of calcium oxalate. It is these needlelike crystal masses that produce the irritation referred to as acridity. Any procedure that disintegrates the acicular structures decreases their capacity to produce irritation. This may happen through boiling; hence the supposition of volatility of the irritant substance. The degree of so-called acridity is governed by the physical character of the crystals and the nature of the plant tissues in which they are embedded, those plants containing the long, very slender crystals being much more acrid than those in which the crystals are shorter and thicker. The penetration of the raphides of calcium oxalate in a mechanical way can produce a fiery and painful irritation.

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[1] Brown, E. D., and Anderson, D. D.: The Acridity of Some Plants Due to a Mechanical Action, Jour. Pharmacol. and Exper. Therap., 1918, **12**, 37.

DEMOBILIZATION AND PREMEDICAL EDUCATION

As noted elsewhere, the War Department has ordered the demobilization of all units of the Students' Army Training Corps, and the discharge of the student soldiers began Monday, December 2. This makes unnecessary the further continuance of the condensed course of premedical education which, as shown in The Journal,[1] was established two months ago as a war measure. Had the war lasted for another year, the continuance of the course as outlined would have been an interesting experiment. Since the necessity for it has been removed, however, its continuance would be at altogether too great a cost. It crowded into four quarters, of three months each, the work heretofore requiring six quarters, or eighteen months. Although the curriculum was planned to more than cover the sixty semester hours of credits (the credit measurement of two years of college work), that total was reached only by allowing a credit of about thirteen semester hours for military instruction and training—subjects for which previously no credit was allowed. The emergency schedule not only was a distinct retrogression from the standard of preliminary education generally adopted before the war began, but also, if continued, would be unfair to the students taking it. It would seriously limit their privileges of entering medical colleges, or, if accepted by the medical schools, it would prevent their securing licenses in the majority of states. While it is probable that the licensing boards would have been willing to make concessions if the war had continued, neither such concessions nor a retrogression in standards is justified now that the emergency has passed. The prewar standards have placed both premedical and medical education in this country on a par with those of other leading nations. America has been forced by the war to accept a larger responsibility than heretofore for world problems and policies; it should be in position also to wield a wider influence in medical education and practice. It is of extreme importance, therefore, that premedical college education shall be promptly restored to its prewar status.

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[1] Schedule of Studies for Premedical Students, Current Comment, The Journal A. M. A., Oct. 19, 1918, page 1317.

Association News

NEW COUNCIL APPOINTMENTS

Filling Vacancies on Councils on Medical Education and on Health and Public Instruction

The President of the Association, Dr. Arthur Dean Bevan, has made the following appointments: on the Council on Medical Education, John M. Dodson, Chicago, vice H. D. Arnold, Boston, resigned; Isadore Dyer, New Orleans, vice H. Gideon Wells, Chicago, resigned; on the Council on Health and Public Instruction, Victor C. Vaughan, Ann Arbor, Mich., vice Ludvig Hektoen, Chicago, resigned. These appointments, in accordance with the By-Laws of the Association, fill the vacancies until the next annual session.

Medical Mobilization and the War

Personnel of the Medical Corps

For the week ending November 29, there were in the Medical Corps 31,197 officers, an increase of thirty-nine over the previous week. This personnel includes three major-generals, six brigadier-generals, 200 colonels, 433 lieutenant-colonels, 2,357 majors, 9,986 captains and 18,212 lieutenants. There were in active service 30,408, an increase of sixty-nine over the previous week. Discharges to date include 2,855 officers.

European Red Cross Survey

It is announced by the American Red Cross that Major Homer Folks, formerly head of the New York State Charities Aid Association, who has been with the American Red Cross abroad since July, 1917, has been promoted to lieutenant-colonel and has been made chairman of a special mission to make a survey of the European countries in which the Red Cross is operating on which to base a comprehensive program of reconstruction. It is believed that through the rapidly changing conditions in those countries since the signing of the armistice an even larger demand may be made on the Red Cross. Investigations have already been made in Italy, and the Balkan countries will be next visited. The survey is to include Turkey, Armenia and Palestine.

Students' Army Training Corps Demobilized

On November 26 a telegram was sent to the presidents of all institutions having units of the Students' Army Training Corps, as follows:

> "Commanding Officers of all units of S. A. T. C. both Sections A and B have been directed to demobilize and discharge the men commencing week of December first, with a view to completion of discharge by December twenty-first. Secretary of War has directed this Committee to arrange adjustments under contracts between institutions and War Department concerning which you will be advised. Letter follows."

The letter referred to confirmed the telegram and stated that adjustments would be handled by the business department of the committee in accordance with a line of procedure which is now being determined. It requested that no arrangement be made for the salvage or disposal of barracks, equipment, etc., pending receipt of information from the business department.

Demobilization of Medical Officers

We are informed that the Surgeon-General of the Army has requested the honorable discharge of all officers over 50 years of age with a view to enabling men well along in life to return to their homes and to take up their practice or other work with as little delay as possible. This step is taken with the belief that the older men should have the advantage of an early discharge in order that the work of recovering their practice and reestablishing themselves in their civil capacities may be less difficult. In taking this action the Surgeon-General wishes it to be understood that the work and service of these men in the department have been greatly appreciated, as well as the substantial sacrifice which they have made in entering the service, the spirit which they have exhibited in tendering their services to the country in its time of need, and the satisfactory performance of the duties which have been assigned to them.

At the same time the Surgeon-General has requested the discharge of all officers with a personal rating lower than 55 on the scale of 100.

After these two classes of officers have been discharged the Surgeon-General will adopt a most liberal policy in the demobilization of the remainder of the Medical Corps, and will give special consideration to the policy of discharging officers who are needed by the community or whose affairs in civil life are making insistent demands for their early return. The age, length of service, location in which the officer lives, etc., will be especially considered in returning officers to civil life.

To assist the Surgeon-General to determine his policy of demobilization, a questionnaire is being circulated among the officers and it will be the policy of the department to take such action as will most nearly coincide with the interests and expressed desire of the officer. The questionnaire which has been circulated among officers is as follows:

From: The Surgeon-General

Subject: Demobilization of officers of the Medical Department.

1. I am directed by the Surgeon-General to advise you that the present plans for the demobilization of officers of the Medical Department holding temporary commissions and who hold no Regular Army commissions, contemplate the division of such officers of the Medical Department into four clases:

First: those desiring immediate and complete release by way of honorable discharge;

Second: those desiring immediate release from active service and reappointment in the Officers' Reserve Corps, inactive;

Third: those who desire to remain on duty under their present commissions as long as their services are required;

Fourth: those desiring appointment in the Regular Army and who are considered eligible for such appointment.

2. Under existing law the maximum age limit for appointment in the Medical Corps of the Regular Army is 32 years, Dental Corps, Regular Army, 32 years and Veterinary Corps, Regular Army, 27 years. There is no provision of law for Reserve Commissions in the Sanitary Corps.

3. The Surgeon-General requests that you advise the personnel division of this office immediately in which of the above classes you wish to be placed.

(Signed) C. R. Darnall,
Colonel, Medical Corps, U. S. A., Executive Officer.

In discharging officers the following individual records must be made and transmitted to the office of the Adjutant-General: copy of authority for discharge or separation from active service, report of physical examination, appendix to file record card and qualification card.

The following officers will not be discharged under the provisions of special instructions which have been issued: (*a*) officers holding commissions in the regular Army either on the active list or retired list; (*b*) officers under arrest on charges, or serving sentence of general court martial; (*c*) officers having had money or property accountability, and who have not clearance therefrom; (*d*) officers on sick report or in hospital; (*e*) officers who for exceptional reasons cannot be spared, or who in the opinion of the commanding officer should not be discharged at this time.

We are informed that it is the intention to issue Reserve Corps commissions in general to those officers who have served with credit to themselves in the war, and who desire such commissions.

Weekly Bulletin No. 29, American Expeditionary Forces

The following paragraphs are taken from Weekly Bulletin No. 29, Oct. 28, 1918, issued for circulation among American medical officers in France:

SECONDARY PNEUMONIA WITH INFLUENZA

From all sources, French, English, Swiss, Spanish, throughout the American Expeditionary Forces, and from our cantonments and civil health departments at home, the opinion appears to be unanimous that the respiratory infection now epidemic is due to, or at least the great majority of the cases are accompanied by, the influenza bacillus, which is easily and commonly found in the early stages or onset of the infection, and may be found in lungs, blood and cerebrospinal fluid. Great interest is attached to the incidence of the main, if not the only, serious complication, namely, the pneumonia, sometimes almost a sharply marked lobar involvement, oftener a disseminated patchy or bronchopneumonia.

A striking relationship is shown between the percentage of complicating pneumonias and the mortality from them, and the lack of resistance from one or other cause and the sanitation and hygiene of the different groups reported on. On shipboard with almost intolerable conditions of exposure, fatigue, anxiety, ill nourishment, poor ventilation and close contact, we have as high as 50 per cent. of bronchopneumonia, and of these cases as many as 50 per cent. die within a week of the onset of the disease. In one of the Army corps in active operations we had, in spite of fairly extensive prevalence of influenza, only 20 deaths from pneumonia in three months. In one of the large regions of France where there were many of the younger classes of the French military in barracks undergoing training, pneumonia developed in as high as 33 per cent. of the cases, the percentage of deaths being from 25 to 40 per cent. In a group of 500 cases of influenza at a camp hospital in the S. O. S., 6.45 per cent. developed pneumonia and of these 50 per cent. died.

With uniformity where resistance is high, as for instance, resulting from mature training and active outdoor military operations not beyond human endurance, where men have adequate clothing and hot food and can sleep in dry quarters, influenza is but a temporary inconvenience with insignificant mortality. Early recognition and hospital care prevents complications; segregation, by cubicle and mask, diminishes cross infection. Rest and symptomatic care and nursing under skilled internists diminishes the death rate.

The epidemic, which has lasted about two months since its return in the American Expeditionary Forces, is diminishing in almost all sections and among all troops, old and new arrivals. In Section 2 the reduction in cases has been 50 per cent. in the past week. The percentage of complicating pneumonias among cases in the American Expeditionary Forces has been from 9.3 to 10 per cent. and the total death rate from influenza and all pneumonias occurring during the period of the epidemic has been from 4.5 to 4.8 per cent. Reports from the French military and civil authorities show a mortality of from 5 to 8 per cent. The last convoys of transports arriving during the week with 28,898 men had 149 cases of influenza and pneumonia, and two deaths during the voyage, showing a vast improvement, one previous convoy having arrived with 24,000 troops and 233 deaths en route and another 311 among cases hospitalized after arrival at the base port.

We are beginning to get an increase in the primary lobar pneumonias and it behooves us to take advantage of the warning given us by the influenza and prepare to prevent pneumonia this winter by persistent and consistent measures to raise and maintain individual resistance by providing air, food, warm dry clothing, and by saving men where possible from exhaustion. Once a man is sick with a respiratory disease he must be treated with as much intelligent medical and efficient technic as is lavished on his fellow surgical sufferer who is guarded similarly against the ubiquitous streptococcus.

EPIDEMIC DISEASE REVIEW FOR THE WEEK

Influenza and pneumonia have during the past week diminished in all parts of the American Expeditionary Forces.

The present practice of hospitalizing and holding without transfer all respiratory diseases at once on establishing a diagnosis must be credited with the marked reduction in the number and severity of the complicating pneumonias after influenza. The almost universal adoption of some form of cubicle isolation of all respiratory tract infections in hospitals and the increasing use of nose and mouth masks for these patients on their way to hospitals and on hospital trains, and the protection of hospital personnel in the same way have also played a large part in reducing pneumonias and cross infections.

There has been a further fall in meningitis, 106 cases being reported as compared with 147 and 167, respectively, in the weeks ending October 20 and October 13, and of the cases reported in the past week just 50 per cent. are properly attributable to infection brought on transports.

Diphtheria again shows an increase. The cases are not grouped in any particular organization but are found (at least 67 of the 97 cases reported) among organizations engaged in active operations at the front. It would appear that the great difficulties in reaching men for medical observation of carrier and contact cases and the abundant opportunities for close contact among wounded men during evacuation from the front and from the evacuation hospitals are chiefly responsible for the increase in diphtheria.

Dysentery, measles, typhoid fever and scarlet fever show no significant change.

Weekly Bulletin No. 30

The following paragraphs are taken from Weekly Bulletin No. 30, Nov. 4, 1918, issued for circulation among American medical officers in France:

PREVENTIVE MEDICINE BY PUNGENT ADVICE IN A D. S. O. CIRCULAR OF 80TH DIVISION

"To all Medical Officers. 1. There are over five hundred (500) cases of diarrhea reported in the division. Laboratory examination and clinical study have proved the condition to be a catarrhal enteritis of undiscovered specific cause, and not dysentery. The disease has direct connection with faulty kitchen and mess sanitation, imperfect water sterilization, poor cooking and filthy latrines. In those organizations where food is handled and cooked properly, kitchens kept clean, bags rinsed, and latrines given required attention, there are few cases of diarrhea. Such condition exists in the —— Machine Gun Battalion.

2. In those organizations where there is not the required attention paid to these matters of sanitation the disease is prevalent. Such condition exists in the —— Battalion of the —— Infantry.

3. The matter resolves itself into medical responsibility, and the surgeon who neglects to meet this responsibility is directly responsible for the increased sickness in his command.

4. The mere making of recommendations to organization commanders, and telling people what to do, will not suffice. The surgeon must supervise the work at hand and see to it that sanitary requirements are carried out. If any difficulty is experienced in carrying out health measures properly, report will be made at once to the Division Surgeon, for action by the Commanding General.

5. The best treatment for the existing disease consists in early administration of castor oil, and dieting. Get the castor oil from the Medical Supply Officer. Merely requisitioning for it may not get it; go after it until you get it. Also ferret out the cases in the command so as to give them early treatment. Train the men to report to you promptly for any ailment. The serious cases of diarrhea are the ones not reporting to you until the disease has existed for four (4) or five (5) days or longer, and treatment has been delayed. Such cases generally require hospital treatment. Their service is lost, and when they are evacuated to corps hospitals, as frequently becomes necessary, the men are lost to the division.

6. Get an early breakfast, cut out that bridge game, and get on the job."

WEEKLY REPORT OF DISEASE

Meningitis has shown a gratifying reduction during the past week, 43 cases being reported as against 106 for the week previous. Scarlet fever, diphtheria and dysentery show similar reductions. The widespread prevalence of pneumonia and influenza continues, but there are signs of improvement not only in the military but also in the civil population. The mortality from pneumonia, primary, or complicating influenza, has been very high, in some sections exceeding 50 per cent. The same is true of bronchopneumonia.

The week ending October 18, 9,081 cases of influenza were admitted to hospitals in the American Expeditionary Forces and 10,985 the week ending October 25. Pneumonia, except bronchopneumonia, week ending October 18, 831; week ending October 25, 1,077; bronchopneumonia, week ending October 18, 492; week ending October 25, 853.

Weekly Bulletin No. 31

The following paragraphs are taken from Weekly Bulletin No. 31, Nov. 11, 1918, issued for circulation among American medical officers in France. This bulletin deals largely with the prevention of influenza and pneumonia among troops. In addition to the usual sanitary precautions, the following paragraphs are of interest:

Prevention of Influenza

WORK

When influenza is spreading rapidly in a command it is wise to remember that when men are overworked to the point of exhaustion they are rendered thereby extremely susceptible to infectious diseases. It is advisable, therefore, if military conditions at all permit, to ask that drill schedule and other work be slightly reduced until the epidemic is under control.

WHEN THE DISEASE HAS APPEARED: INSPECTION AND SEGREGATION

When cases of grippe have begun to appear the medical officer should attend roll call and rapidly inspect all the men every morning. This can be done with speed by walking down the line, observing men for signs of "colds in the head," coughing, sneezing, or red eyes, and asking a few questions. Suspicious men should be made to step out and be sent to the sick call, where temperatures should be taken.

Men with definite colds in the head, without temperatures, should be taken out of their billets and made to sleep in special barracks or billets, or other available space, with shelter halfs hung up so as to form screens between neighboring beds. If possible, they should be given an extra allowance of bed covering. They should be placed on light duty for a day or two. If no special quarters are available for such men, put them all together at one end of the barrack and separate this end from the rest of the barrack by hanging up blankets, or in some other way making a screen.

Men with temperatures but without pulmonary signs should be hospitalized in the infirmary or field hospital in special grippe wards. In such wards ample floor space and screening between beds should be attended to. If possible, light and loose gauze masks should be provided for patients and attendants. If the temperature continues without coming down for forty-eight hours, or if pulmonary signs develop, the patient should be evacuated promptly.

Of all men showing temperatures on first inspection careful chest examination should be made. If any signs pointing to extensive bronchitis or actual pulmonary involvement are found, the patient should be evacuated promptly.

EVACUATION

During evacuation grippe cases should not be placed in the same ambulances with wounded or with other sick. Remember that, in evacuating pneumonia, the greatest care must be taken to prevent their exerting themselves. Do not let them walk, or dress, or undress themselves. Keep them on their backs. Failure to observe this may make the difference between recovery and death.

HOSPITALIZATION

In evacuation and other hospitals, grippe cases must be placed in separate wards.

Cases developing pneumonia must be taken out of the grippe wards promptly and placed in separate pneumonia wards.

Beds must be screened one from the other.

Attendants must wear light gauze masks.

Sputum must be disinfected or burned.

Thermometers must be sterilized.

The report is also largely devoted to the epidemic of meningitis which developed in one of the camps, and a study of the cases of this epidemic.

The report concludes:

During the past week there has been a sharp increase in diphtheria, the cases having originated chiefly in the zone of combat in the advance section and thence evacuated to the base hospitals where but few new cases have develond. Dysentery and meningitis show further and marked reductions. Four cases of smallpox have been reported among incoming troops at base ports. Influenza continues to decrease although the incidence and case mortality of the complicating pneumonias continue high.

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Alabama

To Biltmore, N. C., for instruction, from Fort Oglethorpe, Capt. R. C. JONES, Mobile.

To Camp Bowie, Texas, base hospital, from Fort Oglethorpe, Lieut. C. H. MOORE, Birmingham.

To Camp Dodge, Iowa, base hospital, from Camp Grant, Lieut. A. L. GASTON, Ensley.

To Camp Travis, Texas, base hospital, from Fort Sill, Lieut. L. E. SORR[illegible]

To [illegible] of Pennsylvania, from University, Va., L[illegible] adsden.

To [illegible] -General's Office, from Washington, Major [illegible] SLEDGE, Mobile.

Arizona

To Newport News, Va., from New York, Capt. R. E. HERENDEEN, Bisbee.

The following order has been revoked: *To Camp Sheridan, Ala.*, base hospital, from Fort Oglethorpe, Lieut. E. B. THOMPSON, Benson.

Arkansas

To Fort Des Moines, Iowa, from Camp Dodge, Major L. THOMPSON, Hot Springs.

To Hoboken, N. J., from Panama Canal Department, Capt. D. GANN, Jr., Little Rock.

California

To Camp Jackson, S. C., base hospital, from Camp Cody, Lieut. E. H. CRABTREE, San Diego.

To Camp Leach, D. C., from Camp A. A. Humphreys, Lieut. B. J. LASSWELL, Quincy.

To Camp Logan, Texas, from Fort Oglethorpe, Capt. C. M. DePUY, Oakland.

To Camp Travis, Texas, base hospital, from Camp Kearney, Lieut. J. A. GUILFOIL, San Luis Obispo.

To Carlisle, Pa., from Camp Dix, Capt. C. L. McCLISH, Los Angeles.

To Detroit, Mich., from Fort Oglethorpe, Capt. M. P. BURNHAM, San Francisco.

To Fort Benjamin Harrison, Ind., base hospital, from Camp Pike, Capt. A. S. J. SMITH, San Jose.

To Fort Oglethorpe, base hospital, from Camp Fremont, Lieut. F. J. BRESLIN, San Francisco; from Camp Pike, Capt. J. A. JACKSON, San Diego; from San Francisco, Capt. D. A. CONRAD, Santa Barbara.

To Fort Riley, base hospital, from Fort Oglethorpe, Lieut. R. L. CRUM, Los Angeles.

To Hollywood, Calif., Los Angeles State and Normal School, from Fort McDowell, Capt. F. P. BRENDEL, San Francisco.

To Lakewood, N. J., from Fort Oglethorpe, Capt. A. F. HAMMAN, Long Beach.

To Los Angeles, Calif., as examiner, Capt. M. M. CLOUD, Los Angeles.

To Washington, D. C., Surgeon-General's Office, from Lake Charles, Major L. F. LUCKIE, Los Angeles; from Newport News, Major W. A. SAWYER, Berkeley.

To West Baden, Ind., from Camp Dodge, Major C. E. PHILLIPS, Los Angeles.

The following orders have been revoked: *To San Francisco, Calif.*, Leland Stanford University, for instruction, from Letterman General Hospital, Capts. W. C. BAKER, San Mateo; E. L. COTTRELL, Scotia; Lieut. L. DOZIER, Stockton.

Colorado

To Camp Lee, Va., from Camp A. A. Humphreys, Lieut. A. H. PETERS, Colorado Springs.

To Fort Riley, from Camp Zachary Taylor, Lieut. J. A. PHILLPOTT, Denver.

To West Baden, Ind., from Camp Dodge, Lieut. I. C. MIERLEY, Denver.

The following order has been revoked: *To Camp Sherman*, Chillicothe, Ohio, base hospital, for instruction, from Pittsburgh, Lieut. G. L. SHARP, Colorado Springs.

Connecticut

To Camp Travis, Texas, base hospital, from San Antonio, Lieut. F. M. SMITH, Willimantic.

To Camp Wheeler, Ga., base hospital, for instruction, from Fort Oglethorpe, Lieut. G. E. PORTER, Warehouse Point.

To Cooperstown, N. Y., from Fort Riley, Lieut. E. N. DEWITT, Bridgeport.

District of Columbia

To New Haven, Conn., from Fort Oglethorpe, Major R. D. ADAMS, Washington.

To Washington, D. C., Surgeon-General's Office, Colonel H. D. SNYDER, Major T. D. HURLEY. Washington Barracks, from Fort Oglethorpe, Lieut. W. J. G. THOMAS, Washington.

Florida

To Camp McClellan, Ala., from Auburn, Ala., Lieut. A. E. ACKER, Jacksonville.

To Camp Sherman, Ohio, base hospital, from Camp Beauregard, Capt. J. C. VINSON, Tampa.

Georgia

To Camp Wheeler, Ga., base hospital, *for instruction*, from Fort Oglethorpe, Lieut. P. C. QUARTERMAN, Valdosta.

To Fort McPherson, Ga., from Atlanta, Lieut. J. T. MOORE, Sycamore.

To Fort Oglethorpe, base hospital, from Camp Gordon, Capt. H. H. MALONE, Augusta.

To Walter Reed General Hospital, D. C., for instruction, and on completion *to Boston, Mass.*, from Camp Wheeler, Capt. O. L. MILLER, Atlanta.

The following order has been revoked: *To White Plains, N. Y.*, for instruction; from Fort McPherson, Capt. G. P. HUGULEY, Atlanta.

Illinois

To Baltimore, Md., Johns Hopkins Medical School, from New York, Capt. G. B. HASSIN, Chicago.

To Boston, Mass., for instruction, *from* Camp Devens, Lieut. J. L. WEBB, Chicago.

To Camp Cody, N. M., from Fort Bayard, Lieut. C. E. DUNCAN, McClure.

To Camp Custer, Mich., base hospital, *for instruction*, Lieut. P. H. WESSEL, Moline.

To Camp Devens, Mass., from Fort Oglethorpe, Lieut. G. M. LANDAU, Chicago.

To Camp Gordon, Ga., base *hospital*, for instruction, from Fort Oglethorpe, Capt. G. FITZPATRICK, Chicago.

To Camp Hancock, Ga., base hospital, from Boston, Capt. J. H. BACON, Peoria.

To Camp Lee, Va., base hospital, from Camp Custer, Capt. D. M. KEITH, Rockford.

To Camp Logan, Texas, from Fort Oglethorpe, Lieut. J. S. BERKOWITZ, Chicago. Base hospital, from Central Department, Major K. THEXTON, Chicago.

To Camp Meade, Md., from Fort Oglethorpe, Capt. J. V. WHITE, Auburn.

To Camp Travis, Texas, from Fort Riley, Capt. J. H. ELLINGSWORTH, East Moline. Base hospital, from Camp Pike, Lieut. J. T. O'NEILL, Joliet; from Fort Thomas, Lieut. G. H. ANDERSON, Chicago.

To Cape May, N. J., base hospital, from the Surgeon-General's Office, Lieut.-Col. P. P. SCHUYLER DOANE, Chicago.

To Everman, Texas, Barron Field, from Urbana, Lieut. R. F. KNOLL, Chicago.

To Fort Benjamin Harrison, Ind., base hospital, from Fort Riley, Lieut. D. F. PAUL, Chicago.

To Fort McPherson, Ga., from Camp Gordon, Lieut. C. A. JACOBSON, Chicago.

To Fort Oglethorpe, base *hospital*, from Camp Greene, Lieut. G. E. PFEIFFER, Chicago; from Camp *Jackson*, Lieut. H. SERED, Chicago; from Camp Shelby, Lieut. P. T. DIAMOND, Evanston. For instruction, from Chicago, Lieut. H. S. SULLIVAN, Chicago.

To Fort Riley, base hospital, from Fort Oglethorpe, Capt. H. H. SHEETS, Oregon; Lieuts. W. H. HOWARD, D. KLEMPTNER, Chicago.

To Fort Sheridan, Ill., from Camp Devens, Capt. N. S. DAVIS, III, Chicago; from Camp McClellan, Capt. W. H. GAMBILL, Centralia.

To Hampton, Va., Langley Field, from Morrison, Va., Lieut. C. H. REINHARDT, Chicago.

To Indianapolis, Ind., from Mineola, Major O. YARNELL, Decatur.

To Otisville, N. Y., from Camp Zachary Taylor, Capt. W. G. BAIN, Springfield.

To Plattsburg Barracks, N. Y., from Camp Travis, Capt. W. O. KROHN, Chicago.

To Rockefeller Institute for instruction in the treatment of infected wounds, *and on completion to Camp Upton, N. Y.*, base hospital, for instruction, from Fort Oglethorpe, Capt. W. H. GALLAND, Chicago.

To South Baltimore, Md., from Russel, Va., Capt. H. WOOD, Batchtown.

To Walter Reed General Hospital, D. C., for instruction, from Camp McClellan, Lieut. J. R. SHOLL, Peoria.

To Washington, D. C., from Chicago, Lieut.-Col. W. S. SHIELDS. Surgeon-General's Office, from Arcadia, Major R. H. BOLLING, Philadelphia.

To West Baden, Ind., from Camp Dodge, Capt. F. J. LESEMAN, Chicago. For instruction, from Fort Oglethorpe, Lieut. T. W. ROBERTS, Joppa.

The following orders have been revoked: *To Camp Sheridan, Ala.*, from Fort Oglethorpe, Lieut. G. W. WESTERMEIER, Carlinville; G. E. KNAPPENBERGER, Macomb. *To Hampton, Va.*, Langley Field, from Richmond, Va., Capt. R. R. TRUEBLOOD, Lawrenceville.

Indiana

To Camp Grant, Ill., from Camp Beauregard, Lieut. V. G. HURSEY, Legonier.

To Camp Lee, Va., from Camp A. A. Humphreys, Lieut. J. H. HAUCK, Terre Haute; from Fort Oglethorpe, Capt. C. E. GILLESPIE, Seymour.

To Camp Upton, N. Y., base hospital, Capt. H. B. COX, Morristown.

To East Norfolk, Mass., from Camp Greene, Capt. H. D. PURDUM, Sykesville.

To Fort Benjamin Harrison, Ind., for instruction, from Camp Shelby, Capt. H. G. FLEMING, Anderson.

To Fort Oglethorpe, base hospital, *from Fort McPherson*, Lieut. M. M. MORAN, Portland. For instruction, Capt. A. A. THOMAS, Linton.

To Fort Sam Houston, Texas, base hospital, from Camp Kearney, Capt. C. E. COTTINGHAM, Indianapolis.

To Fort Snelling, Minn., from Fort Oglethorpe, Capt. G. W. ANGLIN, Warsaw.

To report to the commanding general, Northeastern Department, from Plattsburg Barracks, Major G. L. GUTHRIE, Indianapolis.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Sevier, S. C.*, base hospital, for instruction, from Fort Oglethorpe, Capt. E. A. BROWN, Indianapolis.

To West Baden, Ind., from Camp Jackson, Capt. J. A. MacDONALD, Indianapolis.

Iowa

To Camp Travis, Texas, base hospital, *from Camp Pike*, Lieut. C. C. LYTLE, Lansing.

To Camp Zachary Taylor, Ky., base hospital, from Nashville, Tenn., Capt. C. ASCHENBRENNER, Pella.

To Fort Benjamin Harrison, Ind., base hospital, from Fort Oglethorpe, Capt. T. B. LACEY, Glenwood.

To Fort Des Moines, Iowa, for instruction, from Fort Oglethorpe, Lieut. M. S. CORLETT, Westgate.

To Fort Oglethorpe, base *hospital*, from Otisville, Capt. W. L. HEARST, Cedar Falls.

To Fort Snelling, Minn., from Camp Grant, Capt. E. J. HARNAGEL, Des Moines; Lieut. W. H. REDMOND, Cedar Rapids.

To Lakewood, N. J., from Fort Oglethorpe, Lieut. J. O. MURPHY, Eldon.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Meade, Md.*, base hospital, for instruction, from Fort Oglethorpe, Capt. F. LAMBACH, Davenport.

To Washington, D. C., Surgeon-General's Office, from Fort Riley, Major H. C. PARKER, Dubuque.

Kansas

To Camp Sherman, Ohio, base *hospital*, from Camp MacArthur, Capt. W. C. CHANEY, Independence.

To Camp Travis, Texas, base *hospital*, from Camp Pike, Lieut. G. A. KING, Maplehill.

To Denver, Colo., for instruction, from Fort Riley, Capt. C. J. McGEE, Leavenworth.

To Walter Reed General Hospital, D. C., from Fort Leavenworth, Lieut.-Col. F. N. CHILTON.

Kentucky

To Camp Lee, Va., from Camp A. A. Humphreys, Major G. C. LEACHMAN, Louisville.

To Detroit, Mich., from Camp *Jackson*, Major E. B. BRADLEY, Lexington.

To Fort Benjamin Harrison, Ind., from Central *Department*, *Capts*. W. T. McKINNEY, S. P. MYER, Louisville; from Walter Reed General Hospital, Capt. J. A. ROBERTSON, Fort Thomas.

To report to the commanding general, Eastern Department, *from* Albany, Lieut. L. J. GODBEY, *Berea*.

Louisiana

To Camp Cody, N. M., from Fort Bayard, Capt. W. H. SEEMAN, New Orleans. Base hospital, from Fort Bliss, Major J. W. LEA, Jackson.

To Camp Jackson, S. C., base *hospital*, *from* Camp Shelby, Lieut. S. M. BLACKSHEAR, New Orleans.

To Camp Logan, Texas, base hospital, from Camp Beauregard, Major W. E. HALL.

To Camp Sherman, Ohio, base *hospital*, from Camp Shelby, Capt. A. B. NELSON, Shreveport.

To Fort McPherson, Ga., from Boston, Lieut. R. S. KEMP, New Orleans.

To Fort Oglethorpe, base hospital, from Camp Gordon, Capt. A. L. WHITMIRE, New Orleans.

To Fort Riley, base *hospital*, from Fort Oglethorpe, Lieut. T. R. McCARLEY, New Orleans.

To Plattsburg Barracks, N. Y., from Camp Custer, Capt. T. W. EVANS, Jackson.

Maine

To Camp Bowie, Texas, base hospital, from Fort Oglethorpe, Capt. C. M. ROBINSON, Portland.

To Fort McPherson, Ga., for instruction, from Camp Jackson, Capt. D. B. CRAGIN, Waterville.

To Houston, Texas, Ellington Field, from Princeton, N. J., Capt. W. E. WHITNEY, Bangor.

Maryland

To Boston, Mass., for instruction, from Fort Oglethorpe, Lieut. G. E. LANCASTER, Bowie.

To Camp Wheeler, Ga., as camp surgeon, from Camp Meade, Major O. H. STANLEY.

To Carlisle, Pa., for instruction, from Camp Custer, Capt. W. B. PERRY, Baltimore.

To East Norfolk, Mass., from Plattsburg Barracks, Lieut. L. B. HOHMAN, Baltimore.

To Erie, Ohio, from Camp Lee; Capt. P. L. TRAVERS, Easton.

To Fort Hancock, N. J., from Camp Upton, Capt. F. K. NICHOLS, Baltimore.

To Fort McPherson, Ga., from Boston, Lieut. L. BRADY, Baltimore.

To Fort Oglethorpe, base hospital, from Camp McClellan, Capt. T. J. COONAN, Westminster; from Camp Shelby, Major A. D. ATKINSON, Baltimore.

To Newport News, Va., from Fort Oglethorpe, Capt. N. H. BRUSH, Baltimore.

To Rockefeller Institute for instruction, and on completion *to Boston, Mass.,* from Camp Meade, Lieut. T. S. MEBANE.

To Schenectady, N. Y., from Troy, N. Y., Lieut. A. L. WILKINSON, Raspeburg.

To Walter Reed General Hospital, D. C., from the Surgeon-General's Office, Capt. H. P. MAUCK, Baltimore, Lieut. C. L. BAKER, Takoma Park.

To West Baden, Ind., for instruction, from Fort Oglethorpe, Lieut. J. A. SKLADOWSKY, Baltimore.

To Williamsbridge, N. Y., from Camp Meade, Capt. G. F. SARGENT, Towson.

Massachusetts

To Arcadia, Fla., Dorr Field, from Atlanta, Lieut. A. O. McLAUGHLIN, Haverhill.

To Camp Abraham Eustis, Va., from Newport News, Lieut W. W. MARSTON, Newton.

To Camp Devens, Mass., base hospital, from Syracuse, Major C. B. STEVENS, Worcester.

To Camp Dix, N. J., from Fort Oglethorpe, Lieut. E. R. GOOKIN, Boston.

To Camp Hancock, Ga., base hospital, from Camp Sevier, Capt. E. L. HUNT, Worcester.

To Camp Kendrick, N. J., from Eastern Department, Capt. H. H. SUMNER, Lowell.

To Camp MacArthur, Texas, base hospital, from Otisville, Capt. G. L. SCHADT, Springfield. Base hospital, for instruction, from Camp Custer, Major W. E. FAULKNER, Boston.

To Camp Travis, Texas, base hospital, from San Antonio, Lieut. D. H. NISBET, Boston.

To Camp Upton, N. Y., from Eastern Department, Capt. W. H. ALLEN, Mansfield. Base hospital, for instruction, from Camp Crane, Capt. E. FLAGG, Boston.

To Carlisle, Pa., from Camp Beauregard, Major A. S. KIRKWOOD, Newton; from Fort Oglethorpe, Capts. D. L. MARTIN, Boston, W. G. CURTIS, Wollaston.

To Detroit, Mich., from Camp Meade, Lieut. H. M. BAKER, Boston.

To Fort McHenry, Md., from Camp A. A. Humphreys, Lieut. A. D. VAMVAS, Boston.

To Fort McPherson, Ga., Lieut. D. B. COLEMAN, Wellesley.

To Fort Oglethorpe, base hospital, from Camp Wadsworth, Lieut J. H. GALLAGHER, Chicopee.

To Fort Riley, base hospital, from Fort Oglethorpe, Lieut. J. J. H. HILTON, Lawrence.

To Fort Snelling, Minn., from Fort Oglethorpe, Capts. T. E. CAVANAUGH, Holyoke; C. C. BURPEE, Malden.

To Lakewod, N. J., from Fort Oglethorpe, Capt. T. W. MURPHY, Lawrence.

To Newport News, Va., from Camp Zachary Taylor, Capt. E. B. YOUNG, Boston.

To Panama Canal Department, Lieut. A. A. NAUMANN, Springfield.

To Plattsburg Barracks, N. Y., from Camp McClellan, Major G. E. McPherson, Harding.

To report to the commanding general, Northeastern Department, from Plattsburg Barracks, Lieut. J. Y. RODGER, Lowell.

To San Antonio, Texas, Kelly Field, from Ithaca, Lieut. E. E. LIGHT, East Long Meadow.

Michigan

To Alcatraz, Calif., for instruction, from Camp Kearney, Lieut. W. G. JENKINS, Newberry.

To Camp Abraham Eustis, Va., from Fort Oglethorpe, Lieut. H. S. CARR, Niles.

To Camp Custer, Mich., base hospital, Lieut. C. R. WALSH, Detroit.

To Camp Lee, Va., from Fort Oglethorpe, Lieut. J. H. HOUTON, Flint.

To Camp Sevier, S. C., base hospital, from Fort Oglethorpe, Lieut. J. H. MULLER, Grand Rapids.

To Camp Sherman, Ohio, base hospital, Capt. T. H. E. BELL, Reading; from Camp Dodge, Major W. N. SALISBURY, Ann Arbor.

To Camp Travis, Texas, base hospital, from San Antonio, Lieut. L. M. BUSH, Detroit.

To Detroit, Mich., from Camp Meade, Lieut. A. W. HEINE, Detroit.

To Fort Porter, N. Y., from Camp Custer, Capt. S. A. BUTLER, Pontiac.

To Fort Riley, base hospital, from Fort Oglethorpe, Capt. C. A. WOODRUFF, Detroit.

To Houston, Texas, Ellington Field, from Princeton, N. J., Lieut R. F. BOONSTRA, Detroit.

To Lakewood, N. J., from Fort Oglethorpe, Capt. F. B. MINER, Flint.

To Markleton, Pa., from New Haven, Capt. A. M. WEHENKEL, Detroit.

To Rockefeller Institute, for instruction in the treatment of infected wounds, and on completion *to their proper stations,* from Camp Meade, Lieut. J. K. BURNS, Jr., Detroit; from Jeffersonville, Ind., Capt. C. B. GARDNER, Alma.

The following order has been revoked: *To Sawanee, Tenn.,* from Fort Oglethorpe, Capt. C. F. SMITH, Whitehall.

Minnesota

To Camp Dodge, Iowa, from Camp Zachary Taylor, Lieut. H. OERTING, Minneapolis. Base hospital, from Camp Grant, Lieut. J. M. ARNSON, St. Paul; from Fort Douglas, Lieut. W. J. McKILLIP, Duluth.

To Camp Las Casas, P. R., from Camp Jackson, Capt. C. F. McNEVIN, St. Paul.

To Camp Pike, Ark., base hospital, from Fort Riley, Capt. L. M. BOYD, Alexandria.

To Fort Bayard, N. M., from Fort McDowell, Capt. A. PETERSON, Rochester.

To Fort Oglethorpe, base hospital, from Fort Logan H. Roots, Capt. L. A. WILLIAMS, Slayton.

To Fort Snelling, Minn., from Fort Leavenworth, Lieut. F. P. FRISCH, Kimball.

To Minneapolis, Minn., as examiner, Capt. R. S. PERRY, Minneapolis.

Missouri

To Astoria, N. Y., from Camp Custer, Lieut O. T. MOREY, Salisbury.

To Camp Crane, Pa., base hospital, from Fort Oglethorpe, Lieut. D. J. ROYER, Joplin.

To Camp Meade, Md., from Camp A. A. Humphreys Lieut. D. S. VAN HECKE, Kansas City.

To Carlisle, Pa., from Fort Oglethorpe, Capt. C. S. REHFELDT, St. Louis.

To Fort Des Moines, Iowa, from Jefferson City, Lieut.-Col. A. VON SCHRADER.

To Fort Leavenworth, Kan., from Camp Joseph E. Johnston, Lieut. E. Y. PARE, Leeton.

To Fort McPherson, Ga., from Fort Oglethorpe, Capts. W. E. MEANWELL, Columbia; R. E. NIEDRINGHAUS, St. Louis.

To Fort Oglethorpe, base hospital, from Camp Beauregard, Lieut. R. H. UNDERWOOD, Kansas City; from Camp Sevier, Lieut. H. F. PARKER, Warrensburg; from Camp Zachary Taylor, Lieut. J. C. DONOHUE, St. Louis. Evacuation hospital, from Camp Travis, Capt. J. D. PORTERFIELD, Cape Girardeau.

To Fort Riley, base hospital, from Fort Oglethorpe, Lieut. J. W. HUGHES, Leadwood.

To Fort Sam Houston, Texas, base hospital, *Capt. G. P. ALTON,* Barry.

To Kansas City, Mo., as examiner, Capt. J. G. HAYDEN, Kansas City.

To Newport News, Va., from Camp Leach, Capt. E. S. SMITH, Macon.

To Norfolk, Va., camp hospital, from Fort Oglethorpe, Lieut. W. L. MATLOCK, Sedalia.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Meade, Md.,* base hospital, for instruction, from Fort Oglethorpe, Capt. V. B. KIEFFER, St. Louis.

To Washington, D. C., [illegible] *to Camp Hancock, Ga.,* from Hoboken, Capt. D. E [illegible] St. Louis.

To West Baden, Ind., [illegible] Lieut. T. E. LILLY, Kansas City.

Montana

To Camp Lee, Va., from Camp A. A. Humphreys, Capt. M. D. RIDLE, Shelby.

To Fort Oglethorpe, base hospital, from Camp Joseph E. Johnston, Lieut. E. S. PORTER, Moore.

To Fort Sill, Okla., from Norman, Okla., Lieut. *J. J.* TOBINSKI, Missoula.

Nebraska

To Camp Meade, Md., from Camp A. A. Humphreys, Lieut. R. F. DECKER, Byron.

To Carlisle, Pa., from Camp Zachary Taylor, Lieut. R. J. STEARNS, Omaha.

To Fort Jay, N. Y., from Camp Las Casas, Capt. *J. A.* STRONG, Kearney.

To Fort Oglethorpe, base hospital, from Camp Jackson, Capt. C. H. NEWELL, Omaha.

To Washington, D. C., and on completion *to Camp Gordon, Ga.,* from Hoboken, Capt. F. A. WILMOT, Bethany. On completion *to Camp Jackson, S. C.,* from Hoboken, Major E. S. TENNEY, Lincoln.

To West Baden, Ind., from Camp Dodge, Capt. A. R. DES JARDIEN, Lincoln.

The following order has been revoked: *To Camp Logan, Texas,* base hospital, Capt. C. A. ALLENBURGER, Columbus.

New Hampshire

To Boston, Mass., for instruction, from Camp Devens, Lieut. E. H. THOMPSON, Hampton.

To Camp Jackson, S. C., base hospital, from Camp McClellan, Lieut. G. S. FOSTER, Manchester.

The following order has been revoked: *To Camp Upton, N. Y., base hospital,* from Fort Oglethorpe, Lieut. F. E. SPEAR, Woodsville.

New Jersey

To Camp Dix, N. J., from Army Medical School, Lieut. J. J. MANN, Perth Amboy. Base hospital, *from* Fort Oglethorpe, Capt. G. S. WILLIS, Morristown.

To Camp Jackson, S. C., base hospital, from Camp Sevier, Capt. J. W. FARROW, Dover.

To Camp McClellan, Ala., base hospital, from Camp Jackson, Lieut. C. P. CLARK, Summit. Base hospital, for instruction, from Fort Oglethorpe, Lieut. J. J. BURNE, Newark.

To Camp Meade, Md., base hospital, from Bound Brook, N. J., Lieut. J. T. LEAHY, Bound Brook.

To Camp Meigs, D. C., as tuberculosis examiner, from Camp A. A. Humphreys, Lieut. S. R. FAIRCHILD, Penn's Grove.

To Carlisle, Pa., from Fort Oglethorpe, Capt. W. A. McMURTRIE, Morristown.

To Fort Oglethorpe, base hospital, from Camp Wadsworth, Capt. C. W. EVELETH, West Orange.

To Newport News, Va., from Camp Meade, Lieut. E. B. FUNKHOUSER, Trenton; from Washington, Capt. G. PAYNE, Cedar Grove.

The following orders have been revoked: *To Camp Sheridan, Ala.*, from Fort Oglethorpe, Lieuts. T. H. PLATT, Dunellen; J. J. LEVY, Ocean Gate. *To Camp Wheeler, Ga.*, Lieut. A. E. OLPP, West Hoboken.

New York

To Camp Abraham Eustis, Va., from Fort Oglethorpe, Lieut. G. P. MICHEL, Buffalo. Base hospital, for instruction, from Camp Meade, Lieut. H. F. VAN LOON, Albany.

To Camp Crane, Pa., base hospital, from Camp A. A. Humphreys, Capt. A. A. EPSTEIN, New York; from New Haven, Lieut. D. JUNG, Buffalo.

To Camp Devens, Mass., from Philadelphia, Lieut.-Col. I. M. UNGER, Ithaca.

To Camp Hancock, Ga., base hospital, for instruction, from Fort Oglethorpe, Lieut. M. B. SPONSLER, New York.

To Camp Jackson, S. C., from Richmond, Lieut. S. ZWERLING, Brooklyn. Base hospital, from Camp Logan, Lieut. J. M. BLANK, Brooklyn; from Camp Sevier, Lieuts. D. W. JENNINGS, Catskill; S. McLEAN, New York.

To Camp McClellan, Ala., to examine the command for nervous and mental diseases, from Plattsburg Barracks, Capt. C. A. ROSEWATER, New York.

To Camp Meade, Md., base hospital, from Fort Oglethorpe, Major P. W. NATHAN, New York; from New Haven, Major O. TEAGUE, Staten Island.

To Camp Sevier, S. C., base hospital, from Fort Oglethorpe, Lieut. J. H. BURKE, Brooklyn.

To Camp Shelby, Miss., base hospital, for instruction, from Fort Oglethorpe, Capt. J. S. DORIAN, Brooklyn.

To Camp Travis, Texas, base hospital, from Camp MacArthur, Lieut. L. A. BINGAMAN, New York.

To Camp Zachary Taylor, Ky., from the Surgeon-General's Office, Lieut. F. L. GATES, New York.

To Carlisle, Pa., from Fort Oglethorpe, Lieut. F. M. FRANKFELDT, New York.

To Erie, Ohio, from Fort Oglethorpe, Lieut. J. E. WRIGHT, Mendon.

To Everman, Texas, Barron Field, from Urbana, Lieuts. J. P. FITZGERALD, S. Z. ORGEL, New York.

To Fort H. G. Wright, N. Y., from Hampton, Lieut. S. S. INGALLS, Parish.

To Fort McHenry, Md., from Camp A. A. Humphreys, Lieut. A. MANGIARACINA, Brooklyn; from Camp Upton, Lieut. W. L. SNEED, New York.

To Fort McPherson, Ga., for instruction, from Camp Jackson, Capt. J. H. LEWIS, Buffalo; Lieut. M. R. BOOKMAN, New York.

To Fort Oglethorpe, base hospital, from Camp Fremont, Lieut. E. M. JOHNSON, New York; from Camp Jackson, Lieut. G. A. CLARK, New York; from Camp McClellan, Capt. C. J. HUNT, Clifton Springs. Evacuation hospital, from Camp Wadsworth, Lieut. S. O. SHUMWAY, Brooklyn.

To Fort Ontario, N. Y., from Fort Porter, Lieut. B. F. HAUENSTEIN, Buffalo.

To Fort Riley, base hospital, from Fort Oglethorpe, Capt. A. S. RULAND, Syracuse.

To Fort Sill, Okla., base hospital, from Camp Sheridan, Lieut. B. WILSON, New York.

To Governor's Island, N. Y., from Fort Jay, Capt. F. L. CHRISTIAN, Elmira.

To Houston, Texas, Ellington Field, from Princeton, N. J., Lieut. P. B. JENKINS, New York.

To Lakewood, N. J., from Fort Oglethorpe, Lieut. H. B. DUPUY, New York.

To New Haven, Conn., Yale Army Laboratory School, from Camp Lee, Lieut. S. MORSE, New York.

To New York, as examiner, Major J. F. FRASER, New York. College of the City of New York, from Yonkers, Lieut. M. B. KUNSTLER, Yonkers.

To Pittsburgh, Pa., from Camp Lee, Lieut. R. E. MYERS, Cableskill.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion to Camp Sherman, Ohio, base hospital, for instruction, from Fort Oglethorpe, Capt. I. LEBELSON, New York. On completion *to Camp Zachary Taylor*, base hospital, for instruction, from Fort Oglethorpe, Capt. E. S. GUSHEE, New York.

To Walter Reed General Hospital, D. C., from Fort Oglethorpe, Lieuts. S. EPSTEIN, New York; E. B. COOK, Rochester.

To Washington, D. C., from New York, Col. H. D. SNYDER. American University, from Army Medical School, Capt. J. M. Parkhurst, Bath. On completion *to Camp Dix, N. J.*, Camp Devens, and Boston, Mass., headquarters, Northeastern Department, *Camp Upton, N. Y.*, and *Hoboken, N. J.*, from Fort Oglethorpe, Capt. E. L. SWAN, Brooklyn. St. Elizabeth's Hospital, from Camp A. A. Humphreys, Lieut. J. V. SWIERAT, Kings Park. Surgeon-General's Office, from San Antonio, Capt. P. J. LIPSETT, New York.

To Waynesville, N. C., from Camp Pike, Capt. E. P. EGLEE, New York.

To Williamsbridge, N. Y., from Camp Shelby, Capt. J. S. RICHARDS, New York; from Walter Reed General Hospital, Lieut. S. DANZER, Brooklyn.

The following order has been revoked: *To Camp Sheridan, Ala.*, from Fort Oglethorpe, Capt. A. MARK, Elmira.

North Carolina

To Camp Devens, Mass., as assistant to camp surgeon, from Camp Polk, Lieut. F. H. SPARRENBERGER.

To Camp Jackson, S. C., base hospital, from Camp Wheeler, Capt. S. D. CRAIG, Winston-Salem.

To Camp Logan, Texas, base hospital, from Camp Pike, Lieut. W. B. SHARP, Hertford.

To Dansville, N. Y., from Fort Slocum, Capt. A. DURHAM, Charlotte.

To Fort Bayard, N. M., from Fort Oglethorpe, Capt. W. WYATT, Winston-Salem.

To Fort Oglethorpe, base hospital, from Camp Hancock, Lieut. W. MONCURE, JR., Hamlet; from Camp Jackson, Capt. N. B. ADAMS, Murphy.

To Otisville, N. Y., from Camp McClellan, Capt. J. R. WILLIAMS, Asheville.

The following order has been revoked: *To Camp Kendrick, N. J.*, from Camp Upton, Capt. L. D. FLOYD, Cerro Gordo.

North Dakota

To Denver, Colo., for instruction, from Fort Riley, Lieut. F. E. WEED, Park River.

To Williamsbridge, N. Y., from Camp Crane, Lieut. W. H. WITHERSTINE, Grand Forks.

Ohio

To Camp Crane, Pa., base hospital, from New Haven, Lieut. C. SATER, Cincinati.

To Camp Devens, Mass., base hospital, from Syracuse, Lieut. R. A. THORNTON, Columbus.

To Camp MacArthur, Texas, as camp surgeon, from Camp Pike, Lieut.-Col. E. F. McCAMPBELL, Columbus.

To Camp Sevier, S. C., base hospital, for instruction, from Fort Oglethorpe, Capt. S. W. EVANS, Cleveland.

To Camp Sherman, Ohio, base hospital from Camp Zachary Taylor, Capt. A. CROTTI, Columbus; from Fort Oglethorpe, Capt. R. A. GOUDY, Newcomerstown; Lieut. H. A. BUDD, Cleveland.

To Camp Travis, Texas, base hospital, from Camp Pike, Lieut. O. R. KACKLEY, Pleasant City.

To Cape May, N. J., from New York, Lieut. J. R. DAVIS, Toledo.

To Cleveland, Ohio, as examiner, Lieut. C. A. BOWERS, Cleveland.

To Detroit, Mich., for instruction, from Fort Oglethorpe, Lieut. D. C. FOX, Kenton.

To Fort Benjamin Harrison, Ind., base hospital, from Camp Zachary Taylor, Lieut. C. C. SHEARER, Cincinnati.

To Fort McHenry, Md., from Walter Reed General Hospital, Lieut. J. F. WILLIAMS, Cincinnati.

To Fort McPherson, Ga., from Camp Shelby, Capt. J. J. LASALLE, Toledo. For instruction, from Fort Oglethorpe, Lieut. F. C. BISSELL, Akron.

To Fort Oglethorpe, base hospital, from Army Medical School, Major R. D. MADDOX, Cincinati; from Camp Jackson, Lieut. E. E. BAKER, Cincinnati; from Camp Sevier, Lieuts. T. A. COSTELLO, D. H. PATTERSON, Cleveland; from Camp Wadsworth, Capt. A. N. WISELEY, Ada; from Fort McHenry, Lieut. J. H. BUFF, Cincinnati. To give orthopedic instruction, from Camp Upton, Major A. S. McCLAIN, Lakewood.

To Fort Sheridan, Ill., from Ann Arbor, Lieut. C. W. IRISH, Barberton.

To Hampton, Va., Langley Field, from Morrison, Va., Capt. P. F. DAVIDSON, Cleveland.

To Lakewood, N. J., from Fort Oglethorpe, Capt. L. A. LEVISON, Toledo.

To Montgomery, Ala., from Mineola, Major C. P. GROVER, National Military Home.

To New Cumberland, Pa., from Camp Meade, Capt. F. J. WOOD, Cleveland.

To *Plattsburg Barracks, N. Y.*, from Jefferson Barracks, Lieut. G. H. REEVE, Cleveland.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Lee, Va.*, *base hospital*, for instruction, from Fort Oglethorpe, Lieut. H. M. SCHNEIDER, Cincinnati. On completion *to Camp Sevier, S. C.*, base hospital, for instruction, from Fort Oglethorpe, Lieut. W. R. GOFF, Cleveland. On completion *to Williamsbridge, N. Y.*, for instruction, from Fort Oglethorpe, Lieut. R. G. MOSSMAN, Youngstown.

To San Antonio, Texas, from Ithaca, Lieut. F. W. THOMAS, Piqua.

To Walter Reed General Hospital, D. C., from Fort Oglethorpe, Lieut. W. H. MILLER, Columbus.

To West Baden, Ind., for instruction, from Fort Oglethorpe, Capt. M. V. REPLOGLE, Bryan.

Oklahoma

To Camp MacArthur, Texas, base hospital, from Camp Beauregard, Capt. C. B. TAYLOR, Oklahoma City.

To Camp Meade, Md., from Camp A. A. Humphreys, Lieuts. J. A. NELSON, Centrahoma; E. MOSELEY, Millerton.

To Camp Polk, N. C., as camp surgeon, from Camp Devens, Major W. E. HARRINGTON, Wakita.

To Camp Sevier, S. C., base hospital, from Camp Travis, Capt. C. R. DAY, Oklahoma City.

To Camp Travis, Texas, from Fort Riley, Lieut. W. H. KINGMAN, Bartlesville.

To Fort Oglethorpe, base hospital, from Camp Cody, Lieut. G. H. APPLEWHITE, Shawnee.

To Fort Riley, base hospital, from Camp Travis, Lieut. H. M. REEDER, Shawnee.

Oregon

To Camp Lewis, Wash., base hospital, from Lakewood, Lieut. J. M. ODELL, Portland.

To Fort McPherson, Ga., from Boston, Lieut. R. E. WATKINS, Portland.

Pennsylvania

To Camp Abraham Eustis, Va., base hospital, from Camp Sherman, Lieut. H. GOODFRIEND, Scranton.

To Camp Cody, N. M., *to examine the command* for nervous and mental diseases, from Camp Wadsworth, Lieut. J. C. BARDIN, University.

To Camp Dix, N. J., base hospital, from Camp Colt, Lieut. F. D. LOHR, Derry.

To Camp Greene, N. C., base hospital, from Fort Oglethorpe, Capt. G. D. MERVINE, Lock Haven.

To Camp Hancock, Ga., base hospital, from Fort Oglethorpe, Lieut. W. H. HAINES, Philadelphia.

To Camp Jackson, S. C., from Tuskegee, Lieut. P. A. NOLL, Glen Rock. Base hospital, from Camp Greene, Capt. W. B. McKENNA, Pittsburgh; from Fort Oglethorpe, Capt. H. W. GASS, Sunbury.

To Camp MacArthur, Texas, base hospital, from Fort Oglethorpe, Capt. H. D. JORDAN, Allentown.

To Camp Meade, Md., base hospital, from Camp Upton, Capt. R. M. ALEXANDER, Reading.

To Camp Travis, Texas, base hospital, from Camp Upton, Lieut. W. D. STROUD, Philadelphia.

To Camp Upton, N. Y., base hospital, from Garden City, Lieut. L. N. GAY, Shamokin.

To Camp Zachary Taylor, Ky., from the Surgeon-General's Office, Major J. H. AUSTIN, Ardmore.

To Cape May, N. J., from New York, Lieut. C. A. BEHNEY, Philadelphia.

To Carlisle, Pa., for instruction, from Camp Meade, Capt. C. C. MECHLING, Pittsburgh.

To Corpus Christi, Texas, for instruction, from Fort Oglethorpe, Lieut. C. K. KISTLER, Reading.

To Fort Benjamin Harrison, base hospital, from Camp Zachary Taylor, Capt. H. H. TURNER, Pittsburgh.

To Fort McPherson, Ga., from Fort Oglethorpe, Lieut. J. O. BOWER, Wyncote. For instruction, from Camp Jackson, Capt. W. ANDERSON, Pittsburgh.

To Fort Oglethorpe, base hospital, from Camp Greene, Lieut. T. J. McGURL, Minersville.

To Fort Ontario, N. Y., from Schenectady, Lieut. J. E. MOORE, Carnegie.

To Hoboken, N. J., from Fort Hancock, Lieut. J. M. MONAGHAN, Minersville.

To New Haven, Conn., Yale Army Laboratory School, *for instruction*, Lieut. V. S. WILKINSON, Oxford.

To Philadelphia, Pa., as examiner, Capt. J. W. WEST, Philadelphia.

To Plattsburg Barracks, N. Y., from Camp Dix, Major R. L. HILL, Woodville.

To Richmond, Va., for instruction, from Fort Oglethorpe, Lieut. R. S. HINCHMAN, McKeesport.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Dix, N. J.*, base hospital, for instruction, from Fort Oglethorpe, Capt. E. M. COWELL, Athens. On completion *to Camp Meade, Md.*, base hospital, *for instruction, from* Fort Oglethorpe, Capt. O. G. LEWIS, Washington. On completion *to Camp Zachary Taylor, Ky.*, base hospital, for instruction, from Fort Oglethorpe, Capt. S. P. GRAY, Chester.

To Walter Reed General Hospital, D. C., from Camp Colt, Lieut. J. W. BANCROFT, Altoona; from Camp Wheeler, Lieut. A. K. DU BELL, Philadelphia.

To Washington, D. C., Surgeon-General's Office, from Americus, Ga., Major W. S. CORNELL, Philadelphia; from Riverside, Calif., Major C. G. EICHER, McKees Rock.

To West Baden, Ind., from Camp Shelby, Capt. C. S. REBUCK, Harrisburg.

To Williamsbridge, N. Y., from Camp Crane, Lieut.-Col. F. B. LUND.

Porto Rico

To Dallas, Texas, from Mineola, Major E. I. VAUGHN, Central Aguirre.

Rhode Island

To Carlisle, Pa., for instruction, from Camp Meade, Lieut. E. S. CAMERON, Providence.

To Fort McPherson, Ga., from Fort Oglethorpe, Capt. R. C. ROBINSON, Providence.

To Mineola, N. Y., Hazelhurst Field, from Princeton, N. J., Capt. A. W. STEVENSON, Newport.

South Carolina

To Astoria, N. Y., from Fort Oglethorpe, Lieut. C. I. GREEN, Orangeburg.

To Camp Greene, N. C., base hospital, from Fort Oglethorpe, Capt. W. S. ZIMMERMAN, Spartanburg.

To Lakewood, N. J., for instruction, from Fort Oglethorpe, Lieut. W. P. TURNER, Greenwood.

To San Antonio, Texas, from Ithaca, Lieut. J. L. BLAIR, Sharon.

South Dakota

To Fort Oglethorpe for instruction, from Camp A. A. Humphreys, Lieut. N. J. NESSA, Sioux Falls.

To Fort Snelling, Minn., from Camp Grant, Lieut. B. H. SPRAGUE, Huron.

To New Haven, Conn., from Camp Dix, Capt. J. G. CHICHESTER, Redfield.

Tennessee

To Cambridge, Mass., from Boston, Capt. T. E. P. CHAMBERS, Cleveland.

To Camp Crane, Pa., base hospital, from New Haven, Lieut. A. T. SIKES, Nashville. Mobile hospital, from Camp Pike, Major J. W. CUNNINGHAM, Memphis.

To Camp Logan, Texas, from Fort Oglethorpe, Lieut. H. P. CALMES, Memphis.

To Camp Upton, N. Y., from Hoboken, Lieut. J. W. RAGSDALE, Memphis.

To Fort McHenry, Md., from Camp Lee, Lieut. J. H. REVINGTON, Chattanooga.

To Fort Oglethorpe, base hospital, from Fort Logan H. Roots, Lieut. W. H. NILES, Tellico Plains. For instruction, Lieut. *R. G. NELSON*, Nashville.

To Fort Riley, base hospital, from Fort Oglethorpe, Capt. O. J. PORTER, Columbia.

To Plattsburg Barracks, N. Y., from Fort McPherson, Lieut. P. J. TRENTZSCH, Rives.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Dix, N. J.*, base hospital, for instruction, from Fort Oglethorpe, Lieut. B. L. JACOBS, Chattanooga.

Texas

To Camp Logan, Texas, base hospital, from Camp Bowie, Lieut. R. R. ROSS, San Antonio.

To Camp Travis, Texas, from Fort Riley, Lieut. R. L. LONG, Atlanta. Base hospital, from Camp MacArthur, Lieuts. J. S. CALHOUN, A. W. NASH, Dallas.

To Camp Wadsworth, S. C., base hospital, from Fort Oglethorpe, Lieut. A. C. ROGERS, Odell.

To Camp Wheeler, Ga., base hospital, for instruction, from San Antonio, Major W. B. RUSS, San Antonio.

To Fort Oglethorpe, base hospital, from Corpus Christi, Lieut. T. W. GRACE, El Paso; from Fort Douglas, Lieut. J. E. McDOWELL, Shamrock.

To Lakewood, N. J., from Fort Oglethorpe, Capt. A. L. RIDLINGS, Sherman.

To New Haven, Conn., for instruction, from Fort Oglethorpe, Lieut. G. HOGG, Edna.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Devens, Mass.*, base hospital, for instruction, from Fort Oglethorpe, Capt. B. F. STEVENS, El Paso.

To Washington, D. C., Surgeon-General's Office, from Camp Bowie, Lieut.-Col. H. D. McINTYRE.

The following order has been revoked: *To New Haven, Conn.*, Yale Army Laboratory School, for instruction, from duty as a contract surgeon, Lieut. M. D. LEVY, Galveston.

Utah

To Camp Dix, N. J., from Fort Oglethorpe, Lieut. T. C. HILL, Huntington.

To Fort MacArthur, Calif., from Hollywood, Lieut. C. G. STIGALL, Salt Lake City.

To Fort Oglethorpe, base hospital, from Camp Logan, Capt. E. R. DUMKE, Ogden.

The following order has been revoked: *To Camp Crane, Pa.*, mobile hospital, from Camp Cody, Capt. G. E. DORLAND, Devil's Slide.

Vermont

To Camp Dix, N. J., from Fort Oglethorpe, Lieut. D. J. CARROLL, Vergennes.

To Fort Myer, Va., as orthopedic surgeon, from Fort Oglethorpe, Capt. W. LINDSAY, Montpelier.

Virginia

To Camp Sevier, S. C., base hospital, from Camp Hancock, Lieut. B. E. STRODE, Amherst.

To Fort Adams, R. I., from Fort Oglethorpe, Lieut. W. H. REMINE, Lodi.

To Fort Des Moines, Iowa, from Camp Zachary Taylor, Capt. W. F. *HARTMAN*, Swope.

To Fort Foster, N. Y., from Fort Ontario, Lieut. C. A. FOLKES, Roanoke.

To Fort McPherson, Ga., from Gainesville, Fla., Capt. H. B. MAHOOD, North Emporia.

To Fort Oglethorpe, base hospital, from Camp Greene, Lieut. F. H. SMITH, Abingdon; from Camp Wadsworth, Capt. T. H. ODENEAL, Richmond.

To Washington, D. C., Surgeon-General's Office, from Garden City, Major J. N. BARNEY, Fredericksburg.

The following orders have been revoked: *To Camp Sheridan, Ala.*, from Fort Oglethorpe, Lieut. E. D. WELLS, Clifton Forge. *To Fort Oglethorpe* for instruction, Lieut. R. H. BORCKWELL, Barnetts.

Washington

To Camp Lewis, Wash., from Everett, Wash., Capt. S. D. BARRY, Puyallup. Base hospital, from Fort Stevens, Capt. J. E. PREUCEL, St. John.

To Fort Snelling, Minn., from Camp Travis, Major E. A. RICH, Tacoma.

To Vancouver Barracks, Wash., Capt. F. J. DELANEY, Seattle.

West Virginia

To Fort McHenry, Md., from Fort Oglethorpe, Capt. G. B. CAPITO, White Sulphur Springs.

To Fort Oglethorpe, base hospital, from *Camp Greene*, Lieut. W. E. MYLES, White Sulphur Springs.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Upton, N. Y., base hospital, for* instruction, from Fort Oglethorpe, Capt. L. K. CRACROFT, Wheeling.

Wisconsin

To Camp Abraham Eustis, Va., from Fort Oglethorpe, Lieut. A. J. LOUGHMAN, Oconomowoc.

To Camp Custer, Mich., from Fort Porter, Capt. J. M. CONLEY, Oshkosh.

To Camp Hancock, Ga., base hospital, for instruction, from Fort Oglethorpe, Lieut. J. H. CARROLL, Milwaukee.

To Camp Jackson, S. C., base hospital, from Camp Cody, *Lieut.* E. R. MURPHY, Antigo.

To Camp Joseph E. Johnston, Fla., base hospital, for instruction, from Fort Oglethorpe, Capt. W. A. PROUTY, Burlington.

To Camp Meade, Md., from Camp A. A. Humphreys, Lieut. J. M. ROSS, Bloom City.

To Camp Travis, Texas, base hospital, from Camp Pike, Capt. C. O. LATHAM, Green Bay.

To Camp Zachary Taylor, Ky., base hospital, from Fort Oglethorpe, Lieut. W. G. DARLING, Milwaukee.

To Dansville, N. Y., from Camp Custer, Capt. W. T. KRADWELL, Wauwatosa.

To Fort Des Moines, Iowa, for instruction, from Fort Oglethorpe, Capt. W. A. LADWIG, Wausau.

To Fort Oglethorpe, base hospital, *from* Camp Zachary Taylor, Capt. B. E. SCOTT, Berlin.

To Fort Sheridan, Ill., for instruction, from Camp Colt, *Major* S. E. GAVIN, Fond Du Lac.

To Otisville, N. Y., from Markleton, Capt. L. W. DUDLEY, Milwaukee.

To Plattsburg Barracks, N. Y., from Camp Sherman, Capt. J. F. WENN, Milwaukee.

To Rockefeller Institute for instruction in the treatment *of infected* wounds, and on completion *to Camp Wadsworth, S. C.*, base hospital, for instruction, from Fort Oglethorpe, Capt. R. W. JONES, Wausau.

The following order has been revoked: *To Carlisle, Pa., from* Camp Crane, Capt. W. HECKER, *Beloit*.

Wyoming

To Wichita Falls, Texas, from San Antonio, Lieut. *J.* T. McBRIDE, Dayton.

ORDERS TO OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Surgeon E. A. SWEET, proceed to New York, for conference with the Secretary of the National Tuberculosis Association in regard to tuberculosis in the southwest.

Passed Asst. Surg. W. F. DRAPER, *proceed* to Washington, D. C., for temporary duty in connection with the Medical Reserve Corps of the Public Health Service.

Passed Asst. Surg. J. H. LINSON, *proceed* to Baltimore, Md., for conference regarding venereal disease clinics in the state of Maryland.

Passed Asst. Surg. J. G. WILSON, proceed to necessary points in the states of Ohio, Virginia, and West Virginia for inspection of nitro plants, with a view of taking them over for use as hospitals for the War Risk Insurance Bureau.

Asst. Surg. R. R. SAYERS, proceed to Joplin, Missouri, and other points in that vicinity for the purpose of establishing a tri-state sanitary district.

Asst. Surg. V. B. MURRAY, report for duty to Surgeon G. W. McCOY, San Francisco, Calif., for duty in experiments relative to the value of influenza vaccine.

Asst. Surg. H. S. MUSTARD, proceed to Wheeling, W. Va., to promulgate regulations necessary to prevent the interstate spread of influenza.

Asst. Surg. R. C. SANDIDGE, proceed to Alexandria, Va., to assume charge of Service activities at that place.

Acting Asst. Surg. B. E. ROBERTS, report to Surgeon W. H. FROST at Washington, D. C., for duty in connection with studies of the epidemiology of the recent epidemic of influenza.

Consulting Hygienists S. M. HAMILL, L. EMMETT HOLT, and J. P. SEDGEWICK, proceed to Washington, D. C., for conference in regard to questions relative to the improvement of the health of the coming generations.

Asst. San. Engr. A. J. SMALSHAF, relieved at Waco, Texas. Proceed to Columbus, Ga., for duty in extracantonment sanitation.

Asst. Educational Director W. P. GREEN, proceed to Philadelphia, Pa., to deliver a lecture before the Poor Richard Advertising Club.

Asst. Educational Director ROBERT D. LEIGH, proceed to Rochester, N. Y., to attend a meeting of the National Municipal League in regard to venereal disease control.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest; such as relate to society activities, new hospitals, education, public health, etc.)

CALIFORNIA

Personal.—Dr. Gavin J. Telfer, San Francisco, state health officer for the southern district, has been appointed to succeed Dr. Edward A. Ingram as state health officer in charge of the South Coast District. Dr. Ingram has been transferred to Sacramento.

Advice for Postinfluenza Period.—Health Officer Dr. Daniel Crosby of Oakland, in notifying the city council that it was the judgment of the health depatrment that influenza masks could be dispensed with November 20, made the following suggestions for the guidance of the people during the postepidemic period while there was a possibility of the recurrence of the disease, and while it was certain that there would still be a few cases occurring:

All persons convalescing from influenza should wear masks when going about, until three weeks after the beginning of the illness; all members of the family of the patient should wear masks for a like period. All persons finding themselves "taking cold" should wear masks while going about and while in contact with others. All employers should request, and see to it, that all employees suffering with what are commonly called "acute colds" or "fresh colds" wear masks while at work and in contact with their fellow employees or the public. The school department should cooperate in the same way with reference to both teachers and pupils. It was also suggested that persons working in neighboring cities requiring masks should continue to wear masks while in those cities.

ILLINOIS

Unlicensed Practitioner Punished.—August Labraich, Chicago, is said to have been fined $25 and costs, November 21, for practicing medicine without a license.

Sanatorium Closed.—The Weirick Sanitarium, Rockford, for the treatment of drug and liquor addicts, formerly the Broughton Sanitarium is reported to have been closed.

Proposed Union of Hospitals.—A committee of seventeen has been appointed to formulate plans for taking over the Alice Home Hospital and Lake Forest Hospital, Lake Forest, combining them into one institution.

Tuberculosis Dispensary Moves.—The free tuberculosis dispensary, for the examination and treatment of patients suffering from tuberculosis in Peoria, has been moved from 310 Chestnut Street, to 1300 Adams Street, and will be open every Saturday morning from 9 o'clock until noon.

Tuberculosis Nurses Form Union.—Thirty-four nurses enrolled in a newly formed labor union at the Municipal Tuberculosis Sanatorium, Chicago, recently. The union is affiliated with the Federation of Labor, a charter having been secured through the president of the Woman's Trade Union.

Personal.—Dr. Henry F. Hooker, Danville, has been appointed local physician and surgeon to the Illinois Traction Company, to succeed Dr. George Steely, who has resigned to enter the military service.——Dr. Arthur F. Schuettler, Chicago, was injured, November 22, in a collision between motor cars, sustaining fractures of the collar bone, nose and two ribs.

Diphtheria.—The *Bulletin* of the health department of Chicago calls attention to the considerable increase of diphtheria in October over September. In the latter month there were 423 cases and 41 deaths, or 10 per cent.; in October there were 607 cases and 98 deaths, or more than 15 per cent. In attempting to determine the responsibility for the 139 deaths from diphtheria during the two months, it was found that in about 51 per cent. of the cases the parents had not called a physician, and that in about 49 per cent. the physician had failed to make a prompt diagnosis, which delayed the administration of antitoxin.

MARYLAND

Hospital Opened.—The South Baltimore General Hospital was formally opened during the past week. Drs. Llewellys F. Barker of the Johns Hopkins University and Jane E. Nash, superintendent of the Church Home and Infirmary, made the principal addresses.

Personal.—Dr. Alexander C. Gillis, former superintendent of Sydenham Hospital, Baltimore, on duty on the Western Front, has been wounded.——Dr. Albert F. Conrey, Baltimore, formerly resident physician at Mercy Hospital, has accepted an appointment as a member of the medical staff of the leper colony at Molokai, Hawaian Islands.

Violation of Antinarcotic Law.—Dr. James A. Melvin, Baltimore, is said to have been found guilty, November 19, of violation of the Harrison Narcotic Law and to have been sentenced to imprisonment for six months. Dr. Melvin is charged with having prescribed narcotic drugs for soldiers at Fort Meade, and pleaded guilty to the charge.

Psychiatrist to Aid Police Department.—Investigation of circumstances surrounding future mysterious murders and suicides will be handled strictly on a scientific basis, according to a special order issued by Marshal Carter and transmitted to the district police captains. Dr. John Rathbone Oliver, Baltimore, who was appointed psychiatrist to the criminal courts in Baltimore several months ago, will in the future lend his scientific knowledge to the end of crime solution. He is now visiting physician at the clinic and devotes much time to work in the courts.

Making Influenza Survey.—Ten canvassers, under the direction of Capt. H. F. Smith, S. C., U. S. Army, and H. W. Streeter, sanitary engineer of the United States Public Health Service, are making a government survey in Frederick to ascertain facts concerning the spread and character of the recent influenza epidemic. The city has been marked off into districts and about 25 per cent. of the population will be reached. A house-to-house canvass is being made. This city was selected as an agricultural center, and it is understood that the rural districts of the country will be canvassed later. Maryland was selected for the survey because better records were kept here than in most states. Places have also been marked to take data in Baltimore, Cumberland, and probably Salisbury. Captain Smith has been in the service at Camp Beauregard, Louisiana, and while there studied at first hand many cases of influenza as well as the manner of its communication.

MINNESOTA

Personal.—Dr. Herbert F. Gammons, formerly superintendent of the Deer Wood, Minn., Sanatorium, has been appointed director of the publicity bureau of the Texas State Sanatorium, Carlsbad.——Dr. George S. Wattam, Warren, has been appointed temporary epidemiologist to the state board of health.

MISSOURI

Personal.—Prof. Dennis E. Jackson of Washington University, St. Louis, has been appointed professor of pharmacology in the University of Cincinnati.

Election Returns.—At the annual meeting of the St. Louis Medical Association, the following officers were elected: president, Dr. William Engelbach; vice presidents, Drs.

Rudolph S. Vitt and George F. Chopin, and secretary, Dr. Albert F. Koetter.

Influenza Dominant.—In the report of morbidity and mortality for St. Louis for the week ended November 23, of the 937 cases reported 816 were of influenza, and of the 154 deaths reported, 131 were due to that cause.

MONTANA

Personal.—Dr. Alonzo D. Eckerdt, Helena, left November 24, for a special training course at Yale University.——Dr. Phoebe A. Bottorf, Kalispell, while making a professional call and standing in the road preparing medicine for a patient, was run down by an automobile and seriously injured, the injuries necessitating the amputation of one leg above the knee.——Dr. Bennet S. Rundle, Billings, has been appointed acting assistant surgeon, U. S. P. H. S., and assigned to temporary station at Rapelje.

NEW JERSEY

Hospital for Foreign Sailors.—Word has been received from Washington that the hospital at the immigration station at Gloucester, which was opened during the epidemic period to sailors stricken with the influenza, will be continued as a hospital for foreign sailors.

Personal.—Dr. Guy Payn, medical director of the Essex County Hospital for the Insane, Overbrook, who has been called into the military service, has been granted leave of absence until December 31.——Dr. Fred A. Pringle has been appointed assistant on the medical staff of the Essex County Hospital for the Insane, Overbrook.

Tuberculosis Conference.—The Third Joint Tuberculosis conference was held at Perth Amboy, November 23. In the sociologic section employment for discharged soldiers was discussed as well as the Red Cross Christmas Roll Call, the Modern Health Crusade movement, and the effects of recent legislation on the tuberculosis cause. In the clinical section the new Army standards and the necessity for accuracy in the diagnosis of tuberculosis were discussed, and Dr. David R. Lyman, New Haven, Conn., president of the National Association for the Study and Prevention of Tuberculosis, detailed his experiences with the American Red Cross in France.

NEW YORK

Justices Must Report Prostitution Convictions.—The attorney general of the state has recently sent a letter to all justices of the peace of the state, calling their attention to the amendment of the Public Health Law, made by the legislature of 1918, by which it becomes obligatory for such justices to report to the local board of health all persons convicted under the various laws relating to prostitutes and prostitution, in order that the board of health may determine the presence or absence of venereal disease in such persons.

Typhoid at Herkimer.—One hundred and five cases of typhoid fever were reported from the village of Herkimer during October. This outbreak occurred conjointly with the influnza epidemic, and since, notwithstanding a provision of the state sanitary code requiring Widal tests in all cases suspected of being typhoid, a number of physicians failed to confirm their diagnosis by agglutination tests, there is a possibility that a few of these cases may have been influenza. The outbreak was clearly the result of the use of polluted water. For several days during September polluted water was pumped into the mains from West Canada Creek, and from the hydraulic canal while the chlorinating apparatus was not in operation. The municipal water commission of Herkimer had been previously warned of the danger of permitting the use of raw water from this source. Twenty-five additional cases had been reported up to November 23, but most of these were in all probability secondary to previously existing cases.

New York City

Personal.—Dr. Anthony Bassler has been appointed professor of gastro-enterology at Fordham University.——Dr. Henry E. Pflug, Brooklyn, and Dr. Charles F. W. Horn have been appointed temporary police surgeons.

Sentenced for Illegal Practice.—Henry Miller, Brownsville, Brooklyn, charged with the illegal practice of medicine, is said to have been found guilty and to have been sentenced, November 19, to imprisonment for four months in the Kings County jail.

Safety Institute Changes Name.—The supreme court has granted permission to the American Museum of Safety to change its name to the Safety Institute of America. The institute has plans for the extension of its activities during the coming year.

Anniversary Address.—The anniversary address of the New York Academy of Medicine was delivered, December 5, by Edwin G. Conklin, professor of biology in Princeton University, on "The Biology of Democracy with Especial Reference to the Present World Crisis."

Medical Society of the County of New York Elects.—At its one hundred and thirteenth annual meeting, held November 25, the Medical Society of the County of New York elected the following officers for the ensuing year: president, Col. Charles Howard Peck, M. C., U. S. Army; first vice president, Dr. Charles H. Chetwood; second vice president, Dr. George Gray Ward, Jr.; secretary, Dr. Daniel S. Dougherty; assistant secretary, Dr. J. Milton Mabbott; treasurer, Dr. James Petersen, and censors, Dr. William S. Gottheil, Dr. Gustav G. Fisch and Dr. Herbert B. Wilcox.

Debarkation Hospital Opens.—Army Hospital No. 3, at Eighteenth Street and Sixth Avenue, formerly the Greenhut Building, was opened, November 23, to receive its first consignment of wounded and convalescent soldiers. On that day 426 American soldiers and twenty-four officers were transferred from an incoming transport to the hospital, from which they will be distributed to other hospitals and institutions for convalescent soldiers. The hospital is headed by Major William J. Monaghan of the Medical Corps and is prepared to care for from 3,000 to 4,000 men.

PENNSYLVANIA

Personal.—Dr. Evan O'Neill Kane, Kane, who has been seriously ill as the result of roentgen-ray burns, is reported to be out of danger.——Dr. Edward H. Gingrich, city health officer of Lebanon, who has been seriously ill, is reported to be improved.

Appreciation of Volunteer Workers.—Dr. B. Franklin Royer, Harrisburg, acting commissioner of health, has sent a note of appreciation to the thousands of volunteers, doctors, nurses, and others who so loyally and unselfishly assisted in the care of the sick during the recent epidemic of influenza in the state.

Society Anniversary.—The fortieth anniversary of the founding of the Lackawanna County Medical Society was celebrated, November 19, in the rooms of the society at Scranton. Addresses were delivered by the only two surviving charter members of the society, Dr. Louis H. Gibbs, West Scranton, who spoke on "Organization," and Dr. Sumner D. Davis, Jermyn, who delivered an address on "Disadvantages of the Physician in Olden Times."

Memorial Building for Hospital.—Pierre S. Dupont has presented $300,000 to the West Chester Hospital for the erection of a building in "memoriam" of Lewis Mason, who was Mr. Dupont's chauffeur, and who died of influenza during the epidemic. The money has been made immediately available and plans for the new building are being prepared. The old main building is to be torn down and will be replaced by a steel and concrete building. The wings on either side of the present building—both memorials—will be retained.

Officers for Orphan Committee.—Dr. B. Franklin Royer, acting commissioner of health, has appointed Dr. Nathan C. Schaffer, Harrisburg, superintendent of public instruction, as chairman, and Dr. Samuel McClintock Hamill, Philadelphia, chief of the division of child hygiene, secretary of the committee appointed to collect information as to the commonwealth surrounding the number of children who were rendered orphans because of the recent epidemic of influenza in the state. Dr. Wilmer R. Batt, Harrisburg, state registrar of vital statistics, was appointed statistician of the committee.

Philadelphia

Cost of Epidemic.—At the next session of city councils a request will be made by Director William Krusen for a special appropriation to meet the expense incurred by the municipality in fighting the recent influenza epidemic and the actual expense for service and materials furnished will amount to about $75,000.——According to the report of the health department for the week ending November 30, influenza caused twenty-six deaths, sixteen of which were of adults, and pneumonia caused thirty-one deaths, of which twenty-seven were of adults.

Personal.—Dr. Astley P. C. Ashhurst, who went to France as a major in command of Base Hospital No. 34, unit of the

Episcopal Hospital, has been promoted to the rank of lieutenant-colonel and placed in charge of all the hospitals in the Mantes Sector. His place as director of Base Hospital No. 34 has been taken by Dr. Emory G. Alexander.——Dr. Hyman I. Schenker has been made assistant school medical inspector, and Dr. Edward Haentze has been appointed outdoor physician, bureau of health and charities.——Dr. John Leo Donahue, who has been serving with the British Army, has been commissioned captain in the American Army.

Influenza Conference.—A conference on the influenza epidemic, attended by medical men from the South, middle Atlantic states and New England states, was held at the hygiene laboratory, at the University of Pennsylvania, November 29 and 30. Dr. Wilmer Krusen, director of public health and charities, presided at the sessions. According to Dr. Krusen, figures obtained in Philadelphia showed little difference in the death ratio between whites and negroes, and the density of population appeared to have no effect on the spread of the epidemic as there were 118 deaths in the thickly settled third ward while there were 295 deaths in the twenty-second ward. Among the speakers were: Dr. Edwin W. Kopf, New York, chairman of the vital statistics of the American Health Association; Prof. R. E. Chaddock and Prof. C. C. Grove of Columbia University, Dr. William H. Guilfoy of the Department of Health in New York City and Dr. Frederick L. Hoffman, Newark, N. J., of the Provident Life Insurance Company. This conference was preparatory to the American Public Health Association's convention in Chicago, to be held the second week in December.

SOUTH CAROLINA

Action Taken on Noncompliance with Epidemic Closing Regulations.—In resolutions passed unanimously by the city board of health of Charleston, November 20, the action of the authorities of the Cathedral of St. John the Baptist in holding services, November 3, during the epidemic of influenza, in contravention of the regulations adopted by the health authorities with the approval of the local medical society and others of the local profession, was severely censured, in lieu of more drastic action that might have been taken under the powers of the board. This was the only notable instance in which the quarantine measures of the health authorities were violated during the epidemic, cooperation with the health board being otherwise commendably carried out. In a similar violation of the regulations of the city and health authorities in Los Angeles by members of the Christian science church the supreme court of the state upheld the validity of the ordinance requiring closing, and denied writs of habeas corpus in the cases of five men arrested for its violation by holding a meeting in the church during the epidemic.

TEXAS

State Board Meeting.—The Texas State Board of Medical Examiners held its semiannual meeting in Dallas, November 19 to 21. The eleven members of the board representing the entire state and the various physicians of medicine and osteopathy examined about thirty applicants.

Personal.—Dr. William A. Davis, state registrar of vital statistics, Austin, and secretary of the state board of health for the last five years, has received an offer from the state of Georgia for a similar position at an increased salary. ——Dr. Guy H. Reed, Beaumont, has been appointed a member of the state board of health, to succeed Dr. Louis M. Weinfield, San Antonio, who has resigned.

WISCONSIN

Hospital Opened.—The South Side Hospital, Oshkosh, has recently been opened under the charge of Dr. John E. Schein.

Sanatorium for Grant County.—At the meeting of the county board of Grant County held at Lancaster, it voted unanimously for the construction of a tuberculosis sanatorium.

Personal.—Dr. James P. Lenfestey, DePere, has been elected county physician of Brown County, to succeed Dr. Frank L. Crikelair, Green Bay, who is going overseas.——Dr. John R. Hughes, Dodgeville, has been appointed local surgeon for the Chicago and Northwestern System, to succeed Dr. Walter S. Lincoln, deceased.——Seth M. B. Smith, Wausau, has returned to America, after serving as director of a hospital for refugees at St. Etienne, France.

CANADA

Hospital News.—Major Thomas D. Archibald, Toronto, has been placed in command of the Rosedale Military Hospital, Toronto. It has a capacity for 2,000 soldiers. Major Archibald was transferred from Whitby, Ont., where he held a similar position.——The Guelph Ontario Military Hospital will probably be changed into a hospital for convalescent soldiers with tuberculosis. The first lot of tuberculous soldiers has arrived, seventeen having been transferred from Gravenhurst. The present medical staff will remain in charge of the institution.——A consolidated military hospital scheme is proposed for Victoria, B. C. The city has offered the site for the central institution, the loan to extend for two years after the termination of the war.——The Jordan Memorial Hospital, New Brunswick, has passed into the hands of the Invalided Soldiers' Commission of Canada. The federal authorities have taken a five-year lease of the institution; and civil patients will be cared for at a rate of $15 per week. This hospital was presented to the province originally by Mrs. J. Clarke Jordan, and she is quite willing the soldiers should have the institution.——The Balfour Sanitarium for the Treatment of Pulmonary Tuberculosis, British Columbia, has been changed from a military to a civilian hospital. At the present time Captain Olson is on indefinite leave of absence from the C. A. M. C. and is acting as medical superintendent in charge.

Public Health Notes.—Col. John W. S. McCullough, Toronto, provincial health officer for Ontario, states that placarding and quarantine is not required in Ontario for influenza. While such laws are in force in certain states of the American Union and also in some provinces of Canada, the majority —four-fifths of medical officers of health in the two countries —give it as their opinion that any such laws are incapable of enforcement. At the outset of war the Dominion government was without facilities for a supply of typhoid vaccine and the Ontario Board of Health alone of all the provinces had such facilities. That board has supplied gratuitously to the Department of Militia and Defense about $250,000 worth of typhoid and paratyphoid vaccine, which has proved an invaluable aid for the prevention of those diseases among soldiers.——A central board of health is now being advocated by the medical fraternity for the border cities of Ontario; and an active movement is on foot to bring about amalgamation of the different boards of health of the cities concerned. One central office and one central medical officer of health would enable the Ontario Department of Health to be more efficiently managed.——The medical profession of Halifax, N. S., answered the urgent call of the state of Massachusetts for assistance to fight the spread of influenza, and a detachment of nurses and doctors was sent which was immediately acknowledged by Governor McCall.

GENERAL

Improving City Milk Supplies.—During the last year the Dairy Division of the United States Department of Agriculture, through its specialists, has given assistance to thirty-six cities in fourteen states in the sanitary production and handling of milk. In addition, assistance was given by the United States Public Health Service in the way of sanitary milk surveys, etc., in fifteen extracantonment zones. In the assistance rendered by the government to local communities all phases of city milk supply are covered, such as inspection of dairies, milk plants and other distributing centers, analysis, chemically and bacteriologically, of milk samples, and, when necessary, help in the installation of laboratories and technic and in the interpretation of the results of chemical and bacterial analyses. Advice is also offered in framing ordinances to cover dairy and milk conditions, and milk contests are encouraged for the purpose of creating rivalry among dairymen, which tends to improve the milk supply. In these contests experts from the department act as judges in scoring the product.

Influenza.—In general, influenza continues to abate throughout the country, though there are some cities and some sections in which there is a recrudescence or an accession of the disease. Kansas is one state in which the disease appeared to be increasing the latter part of November, as indicated by reports from Concordia, Leavenworth and Topeka. At Butte, Mont., there seemed to be an exacerbation, and physicians were rebuked for not promptly reporting new cases. November 25, the Public Health Service was asked to send physicians and nurses to the coke district in Fayette County, Pa., on account of the disease. At Scranton, Pa., up to November 22, there had been 5,992 cases with 778 deaths. The disease was abating rapidly. In New York state on about the same date the disease had practically subsided. A number of municipalities in the western part of the state, where outbreaks had been more recent, reported temporary increases in the number of cases following the peace celebrations. Up to that time 257,758 cases had been reported in the state outside of New York City. In *Public Health Reports,* November 22, appears a continuation of the tabulated record of cases throughout the country, as reported to the U. S. Public Health Service, together with an account of influenza among the soldiers abroad, covering the time up to October 21.

Orthopedic Journal Expands.—It is announced that the *American Journal of Orthopedic Surgery,* the official publication of the American Orthopedic Association, which has been the only journal in the English language devoted to orthopedic surgery, will now extend its field of activity and will become also the organ of the newly-formed British Orthopedic Association under the name of the *Journal of Orthopedic Surgery.* This has been brought about through the increased interest and importance of the subject of orthopedics on account of the war. It is believed the purposes of the orthopedic branch of surgery will be best served by the amalgamation, an idea long cherished by Lieut.-Col. Robert B. Osgood, M. C., U. S. Army, Boston, who promoted the establishment of the American journal. The journal will be published from the present offices in Boston under the management of Ernest Gregory. The committees appointed by the British Orthopedic Association consist of R. C. Elmslie, M.S., F.R.C.S., editor, London; T. R. Armour, F.R.C.S.; W. H. Trethowan, F.R.C.S., and H. Platt, M.S., F.R.C.S.; while Charles F. Painter, M.D., Boston, and Robert W. Lovett, M.C., Boston, comprise the committee appointed by the American Orthopedic Association. Miss Hannah Lissner, Boston, has been appointed in charge of the editorial department of the journal in America.

FOREIGN

Deaths Abroad.—Dr. **Joseph Kidd,** London; M. R. C. S., England, 1846, M. D. U. K. C. Aberdeen, 1853; aged 94; one of the most notable homeopathic practitioners of England, and physician to Lord Beaconsfield; died at his home, in Blackheath Park, recently.——**Jose Palomeque,** one of the leading Mexican physicians established in Havana, Cuba, a graduate of the University of Paris; a practitioner for more than fifty years; died in Lenox Hill Hospital, in New York City, October 30.

CORRECTION

Method for Staining the Diphtheria Bacillus.—We are informed by Capt. F. A. Beck that in his article published July 13 with this title, the following change should be made: Bismarck brown 0.480 mg. should be 0.480 gm. In the article published Nov. 16, 1918, under the title "Method for Preparing the Eosinate of Methylene Blue and Method for Staining" eosin yellowish (water-soluble) 0.470 mg. should be 0.470 gm. and methylene blue 0.400 mg. should be 0.400 gm.

SOUTH AND CENTRAL AMERICA, MEXICO AND WEST INDIES

Cuban Donations for the War Victims.—The *Cronica Medico-Quirurgica* of Havana states that the official committee appointed by the government to distribute the funds voted in aid of the victims of the war, has sent $125,000 to France; $80,000 to Belgium; $100,000 to Italy, and $100,000 to England. These sums are the state donations and do not include the gifts by private individuals. The Cuban Red Cross has received half a million which it has devoted to the same purposes.

The Motile Bacillus of Influenza.—At the meeting of the Academia de Ciencias of Havana, November 22, Dr. L. Plasencia, a leading microscopist, presented evidence that a coccobacillus isolated by him constantly from the sputum in cases of true *influenza* bears a causal relation to the disease. It was not found in other diseases, and it reproduced in monkeys a disease closely similar to influenza in the human. The coccobacillus in question is a little broader than the Pfeiffer bacillus, its *minimal* length about 0.6 micron, its extreme length (only in cultures) 2.1 micron, the average about 0.9. In width it varies from 0.1 to 0.3 micron. The grouping is characteristic as each bacillus is separate, even when in clusters. It takes the anilin stains but requires a little longer contact than other bacilli. The most characteristic feature is its motility, equal to that of certain strains of paratyphoid bacilli. As he knows of no previous description of this bacillus, he has named it the *Bacillus influenzae motilis.*

CUBA LETTER

Havana, Nov. 20, 1918.

The Epidemic of Influenza

There are at present about 12,000 cases of influenza in Cuba; but the epidemic is relatively mild, as the cases of bronchopneumonia represent only 3 per cent. of the total, and the statistics show the death rate to be slightly above 1 per cent. The communities in which the disease is most prevalent are Camaguey, with 4,000 cases, and Santiago de Cuba, with 3,000.

The Sociedad de Estudios Clinicos of Havana dedicated an extraordinary meeting to the study and discussion of the epidemic; Dr. L. Ortega, who was appointed speaker, condemned the use of vaccines as a routine measure and said that he saw no scientific basis for the widespread use of antidiphtheric serum against pneumonia and bronchopneumonia. There is no specific treatment for the disease that we call influenza, and until the discovery of the germ puts us on the road to the truth, we can do no more than undertake symptomatic treatment.

DR. PLASENCIA'S RESEARCH WORK

Dr. L. Plasencia, professor of microscopy of the University of Havana, has discovered in the sputum and in the throat of individuals attacked with the present epidemic disease a new micro-organism which at first they thought to be Pfeiffer's but which later they found to be motile, to grow in ordinary mediums as well as in blood agar, and to produce in monkeys a typical attack of the disease: sudden high temperature, catarrhal symptoms and great prostration. The curve of the temperature takes exactly the same course as in human cases. Dr. Plasencia asserts that he has found this germ, which he believes to be specific of the disease, in 90 per cent. of the cases he has examined. Dr. Plasencia is a well known and reliable man, and is not a vaccine manufacturer.

National Federation of Physicians

At the last regular meeting of the Sociedad de Estudios Clinicos, Dr. A. Salcines delivered an address proposing the union of all the physicians of Cuba in a national federation. According to Dr. Salcines' proposition, every physician should belong to the federation and should not be allowed to practice without his membership certificate. In this manner all quacks and unregistered physicians would be put out of business, as well as those graduated physicians who do not carry their practice under strictly ethical conditions. The society took under consideration Dr. Salcines' idea and appointed a commission to study the foreign as well as the home legislation on the matter.

Death of Dr. J. A. Clark

Dr. J. A. Clark, former director of the municipal medical service of Havana, died at his home, November 18, from cerebral hemorrhage. Dr. Clark was at the time of his death director of charities of the republic.

PARIS LETTER

Paris, Nov. 7, 1918.

International Scientific Relations After the War

The Académie de Médecine appointed a special committee to consider this question. The commission consisted of Professors Laveran, Albert Robin, Achard and Drs. Regnard and Siredey. October 15, the Academy, believing personal relations between scientific men of the two groups of belligerents to be impossible until reparation and expiation of the crimes which have put the Central Empires under the ban of humanity permit them again to enter the concert of civilized nations, adopted the following resolutions submitted by the committee:

1. The Central Empires shall be compelled by a provision of the treaty of peace to retire from international scientific associations established by diplomatic conventions and implying personal relations between the members. This exclusion would not apply to common action solely concerning administrative relations indispensable between such public services as those affecting the regulation of navigation, railways, telegraphs, etc.

2. As soon as circumstances allow, those international conventions not belonging to the two categories noted above shall be dissolved by each of the competent groups of the Entente and of the United States of America in accordance with the statutes and regulations of each of them. New associations recognized to be needed for the progress of the

sciences and their application shall be established forthwith by the Allies and the United States, with the eventual cooperation of neutrals.

3. The governments of the allied countries and of the United States shall refrain from sending delegates to any international assembly at which representatives of the Central Empires would be expected to figure. It is desirable that the citizens of the Entente countries and of the United States should adopt the same line of conduct and not take part in any enterprise in which the citizens of the Empires would collaborate.

4. Inquiry should be made as to the steps to be taken to establish intimate collaboration between the Allies and the United States, particularly in the domain of allied science and in the publication of certain bibliographic works.

Anti-Influenza Measures in Schools

The prefect of the Seine district has instructed the mayors, medical inspectors and principals of the schools of Paris and of the département de la Seine to take the following measures with regard to the present epidemic of influenza: (1) Stop all meetings in school buildings; (2) inquire as to the reason for absence of any pupil, and inform, without delay, the bureau of medical inspection of schools of the results of such inquiry; exclude every child from the school who presents any symptoms of indisposition, and have him taken home, notifying the family to secure medical attendance for the child at once; (3) advise families to keep their children at home if they do not feel well; (4) exclude from school the brothers and sisters of the patient. The principal of the school should inform the principals of the schools attended by the brothers and sisters of their own pupils suspected of having influenza; (5) clean the floors and blackboards and desks often with Javelle water, creolin or a 20 per cent. aqueous solution of liquor formaldehyd; (6) do not close down the whole school, but dismiss for fifteen days all classes three fourths of whose membership is absent because of influenza; the school medical inspector may, however, close the school if the situation is grave; (7) proper antisepsis of the nasal fossae.

The Germans and the Pasteur Institute of Lille

The *Figaro* recently published a letter written by Dr. Calmette, October 15, and addressed to the mayor of Lille. Dr. Calmette, who had remained at the head of the Lille Institut Pasteur ever since the German invasion, in this letter protested against the Germans taking away the last three horses which had been used for the production of antidiphtheritic serum. A veterinary had pronounced these horses as being unfit for any service; they were not even shod, and they were absolutely needed by the institute for the production of diphtheria antitoxin. His protest was ineffective, although this action was a violation of the Hague peace conventions, an infringement of the rights of men, and an act of gross inhumanity because it deprived the already sorely tried and unfortunate civil population of the much needed serum for the treatment of diphtheria, especially at a time of the year when this disease is of common occurrence among children. Calmette says that at the proper time he will bring this matter to the attention of all learned societies the world over. Calmette's wife was taken to Germany last year as a hostage.

The Bread Ration of Young Soldiers

During the duration of the influenza epidemic, the soldiers of the class of 1919 who are still in the garrisons will be allowed a bread ration of 700 to 800 gm.

Helping to Fight Influenza

The under-secretary of state of the Service du Santé militaire has placed the mobilized physicians at the disposition of the civil population whenever there is an insufficient number of physicians in any given vicinity. The medical members of the class of 1888 (50 years of age) and older ones, can be sent to points where medical aid is demanded by the needs of the moment. The under-secretary has also asked convalescing physicians to help out, if their state of health permits, and render such service as they can wherever they may happen to be stationed.

Leading Citizens of Lille Protest Against German Atrocities

At the meeting of the Académie de médecine held October 29, the secretary read a letter signed by Dr. Calmette, director of the Institut Pasteur at Lille, M. Parenty, director of the tobacco manufacturers of Lille, and M. Witz, professor on the science faculty of Lille, in which these savants protest against the infamous treatment imposed on the people of Lille by the German authorities. The Academy declared itself as being in sympathy with the writers of the letter, and voted a resolution to the effect that henceforth it would not collaborate with any German publication, nor participate in any scientific meetings or any international congress with German colleagues who have not previously publicly stated their disapprobation of these outrages committed by their government during the war. This letter was also read before the Académie des Sciences at its meeting held October 30.

School for the Blinded at Lille

The war fund for blinded soldiers and sailors founded by Mr. and Mrs. George A. Kessler of New York will supply the money needed to open an institute at Lille for the blinded soldiers of northern France who wish to return near their homes in the territory recently evacuated by the enemy. This decision was taken on request of the French government. More than 200 blinded French soldiers who came from the northern provinces are now resident in the numerous asylums distributed throughout France.

Deaths

Dr. Viault, professor of general anatomy and histology in the Bordeaux medical faculty is dead; likewise, Dr. Albert Auvray, formerly director of the school of medicine and pharmacy at Caen.

Professor Paul Dubois of the University of Berne, author of many publications on diseases of the nervous system, died recently at Berne, aged 70.

Personal

At its last meeting, the Académie des Sciences unanimously elected Marshall Foch *académicien libre* to succeed the late professor Léon Labbé.

LONDON LETTER

London, Nov. 5, 1918.

The National Physique

In the *Observer*, Prof. Arthur Keith discusses the question of the national physique. He refers to the declaration of the prime minister, Mr. Lloyd George, who asked the minister of national service, "How many more men could we have put into the fighting line if the health of the country had been properly looked after?" and was told, "At least one million." In the course of voluntary work at the ministry of national service, Prof. Keith obtained the results of the surveys that are being carried out all over the country by the medical boards in the examination of recruits, and finds that the prime minister has understated the seriousness of the position. Dividing the population into four grades, he considers that if 1,000 young men be taken at random and graded according to their physical fitness, the following should be expected under good conditions: Grade 1, 700; Grade 2, 200; Grade 3, 75; Grade 4, 25. Grade 1 includes men fit for general military service, and Grade 4 men unfit for any of the duties of a soldier. Grade 2 and 3 are intermediate. The actual figures obtained from a large industrial town were: Grade 1, 190; Grade 2, 270; Grade 3, 410; Grade 4, 430. The objection, however, may be raised that the present population of our towns is merely a residue left after the departure of the fit young men to active service in the earlier years of the war. After the age of 30, men tend to become degraded, that is, to pass down the grades. On turning to trades that have been exempted from military service in the earlier years of the war, the objection just made is largely removed; but the figures remain very serious. They are: Grade 1, 270; Grade 2, 152; Grade 3, 158; Grade 4, 420. Professor Keith attributes these results to slum life. Slums produce children who become men of Grades 3 and 4. Another factor is wage earning by women, who are unable to look after their children.

The Question of the Unfit

At a meeting of the National Birth-Rate Commission, Major Leonard Darwin, son of Charles Darwin, said he was inclined to think that we should be driven to some form of sterilization as the only way to deal with the question of the unfit, but that we shall require to know a great deal more before we can move along that path. We shall want to be quite sure that sterilization does not affect the character of the person sterilized, and that if it proves a failure it does not affect the health of any child that may be born. Turning to the question of the racial effects of public expenditure intended to lessen the strain on family life, the effects to be considered are (1) the mother and the children, and (2) the future output of children. With regard to the immediate results on the family, a complex balancing of good and evil effects has to be considered. Improvements in environment cannot be relied on to promote racial progress. It is when looking to the generations of the future that questions of heredity are seen to be of great importance. Good homes contain persons on the average somewhat innately superior to the inhabitants of bad homes, and to decrease the birth rate in bad homes would make for social progress. Social reformers ought to desire to lessen the output of children from bad homes without any reference to the effects of natural inheritance. On this account, it seems that expenditure likely to increase fertility should not be made applicable to bad homes. But expenditure intended to improve hygienic conditions often also tends to promote fertility. In considering the effects of such expenditure, the malthusian arguments must not be overlooked. But help will doubtless be demanded by many reformers to better the conditions in the worst homes. All such help, whether given without breaking up the home or in institutions, is likely to increase fertility. We are, therefore, on the horns of a dilemma. We must either refuse to give assistance to those continuing to live degraded lives, or we must promote enduring racial harm. As the result of a choice between these two evils, no help should be given to homes below a certain standard of decency, suitable institutional assistance being always available for their inhabitants. Harm as well as good will always result from public assistance to selected individuals. This argument points to help being given universally and without selection. But such help would do racial and other harm, because of the heavy taxation thus necessitated and for other reasons. This system of relief should be adopted only when the benefits aimed at are otherwise unattainable. Free feeding and doles to families should be given only in genuine cases of urgent need.

Venereal Disease and Man Power

In a previous letter, the objections that have been made to the defense of the realm regulation, known as 40 D, which makes it penal for any woman having venereal disease to have intercourse with or solicit intercourse with a British soldier, were discussed. The regulation was founded on information that the spread of venereal disease in the British and colonial forces involved a serious loss of man power. Up to the end of August, seventy-eight persons have been convicted of breaches of the regulation, of whom thirty-seven pleaded guilty. The removal for a time of these centers of infection, and the deterrent effect of the regulation on others, have already resulted in a diminution of venereal disease in some army districts. The United States authorities have asked that the regulation be extended so as to apply to their troops in this country, and the governments of Canada and New Zealand have made similar regulations for the protection of their troops in the dominions. In these circumstances the government has decided that the regulation must for the present be retained. It has, however, appointed a small committee to consider what modifications, if any, should be made in its terms or in the procedure for enforcing it. The committee includes Sir Malcolm Morris, a medical woman, and a number of well known philanthropic workers.

Marriages

Asst. Surg. Hardy Vernon Hughens, *Lieutenant*, U. S. Navy, on duty at Great Lakes, Ill., to Miss Agatha Alethea Roemer of Waukegan, Ill., November 28.

Capt. George Flanders Wilson, M. C., U. S. Army (retired), Portland, Ore., to Mrs. Bessie M. Marshall, also of Portland, November 26.

Lieut. Charles Preston Mangum, M. C., U. S. Army, Kinston, N. C., to Miss Margaret Edwards of Chicago, November 6.

Lieut. Harold Thomas Hyman, M. C., U. S. Army, to Miss Rita Abrahams, both of New York City, November 21.

Joseph Luke DeCourcy, Cincinnati, to Miss Frances Cornelia Bickett of Chicago, November 28.

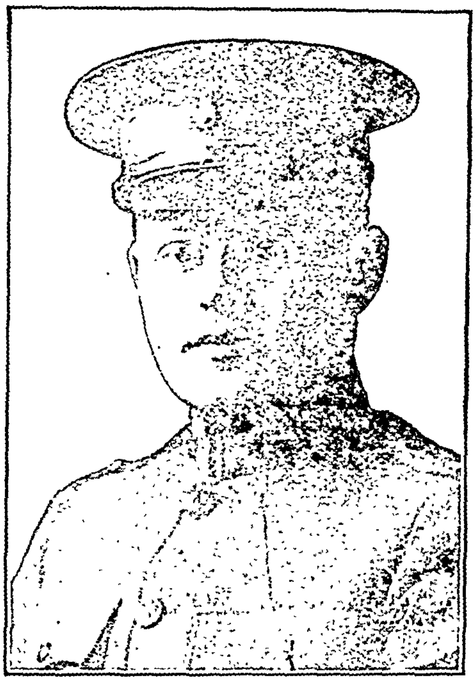
Harold Hill Walker, Kansas City, Mo., to Miss Wanda Ramsey of Omaha, November 10.

Adolph Steiner, Lima, Ohio, to Miss Gertrude Becker of Chicago, recently.

Deaths

Lieut. August Adrian Strasser ⊕ **M. C., U. S. Army**, Arlington, N. J.; College of Physicians and Surgeons in the City of New York, 1896; aged 44; a member of the American Association of Obstetricians and Gynecologists and New York Academy of Medicine; and once president of the New Jersey Academy of Medicine; chief of the children's disease clinic, in the German Hospital, Newark; a member of the staff of the Womens and St. Michaels hospitals, Newark; who entered the Medical Reserve Corps, June 1, 1917, and was on duty at Fort Oglethorpe, Ga., where he received an honorable discharge; died at Newark, N. J., November 20, from cerebral hemorrhage.

Capt. Theodore Fletcher Mead ⊕ **M. C., U. S. Army**, New York City; Cornell University Medical College, New York City, 1912; aged 33; who was appointed assistant visiting physician at Bellevue Hospital in January, 1917; entered the United States service in June, 1917, and sailed for France, June, 1918, and was on duty with the One Hundred and Fourth Field Artillery; died, October 30, from wounds received in action.



Died in the Service
in France
Capt. Theodore F. Meade, M. C.,
U. S. Army, 1885-1918

Capt. Frank Henry Knight ⊕ **M. C., U. S. Army**, Brooklyn; College of Physicians and Surgeons in the City of New York, 1899; aged 42; a specialist in gynecology; formerly visiting surgeon at St. John's and the Kings County hospitals, and the Episcopal Orphan Asylum and Home for the Aged; visiting gynecologist to the Swedish and Methodist Episcopal hospitals; on duty with Base Hospital No. 23 at Portsmouth, England; died from pneumonia, October 28.

Capt. Halstead Robert Wright ⊕ **M. C., U. S. Army**, Columbus, O.; Ohio State University, Columbus, 1910; aged 43; a member of the American Academy of Ophthalmology and Oto-Laryngology; a specialist in diseases of the eye; formerly instructor in physiology and pathology of the eye in his alma mater; on duty at Base Hospital No. 14, Fort Oglethorpe, Ga., died at that place, October 17, from pneumonia following influenza.

Major Shadworth Oldham Beasley ⊕ **M. C., U. S. Army**, San Francisco; Cooper Medical College, San Francisco, 1897; aged 42; assistant clinical professor of obstetrics and gynecology in Leland Stanford Junior University; major of volunteers during the war with Spain with service in the Philippine Islands; on duty with the American Expeditionary Forces in France; is reported to have been killed October 14.

Charles Emery Payne, Brooklyn, N. Y.; New York Homeopathic Medical College, 1903; aged 36; consulting laryngologist and rhinologist to the Jamaica and Cumberland Street hospitals, and attending physician to the home for Consumptives; laryngologist, rhinologist, and assistant oculist and aurist to the Brooklyn Nursery and Infants' Hospital; died at his home, November 18, from pneumonia.

Robert Goodwin Marriner, Menominee, Mich.; Northwestern Medical School, Chicago, 1881; aged 61; a member of the Michigan State Medical Society; attending physician and surgeon to St. Joseph's Hospital, Menominee; city health officer; who fell from a porch while making a professional call, November 12, fracturing two ribs, died at his home, November 21, from secondary pneumonia.

Jacob Rosenberg, New York City; University and Bellevue Hospital Medical College, New York City, 1914; aged 29; a member of the Medical Society of the State of New York; surgeon to Mount Sinai, Hudson Street, and Gouverneur hospitals; died at his home, November 14, from pneumonia following influenza.

William N. Yates ⊕ Fayetteville, Ark.; Missouri Medical College, St. Louis, 1878; aged 67; health officer of Fayetteville, and a member of the Washington County Board of Health; for many years a member of the board of trustees of the University of Arkansas; died at his home, November 17, from pneumonia.

Lieut. Samuel Lewis ⊕ **M. C., U. S. Army,** Brooklyn, N. Y.; Long Island College Hospital, Brooklyn, 1917; aged 22; on duty with the Fifty-Second Field Ambulance, British Expeditionary Forces in France, is reported to have been killed in action on the Somme, August 28.

John Solomon Meltzer, New York City; University and Bellevue Hospital Medical College, 1912; aged 29; a member of the Association of American Physicians; visiting physician at Mount Sinai and Lying-In Hospitals, New York City; died at his home, November 16.

Capt. George Edward Farr ⊕ **M. C., U. S. Army,** Shelbyville, Mo.; University Medical College of Kansas City, Mo., 1906; aged 39; on duty on the Mexican border; died in the base hospital, Brownsville, Texas, October 30, from pneumonia following influenza.

James Corbett Rathbun, Danville, Ill.; Bennett Medical College, 1909; aged 37; a member of the Illinois State Medical Society; while driving across the interurban tracks in Danville, November 13, was struck by an interurban car and instantly killed.

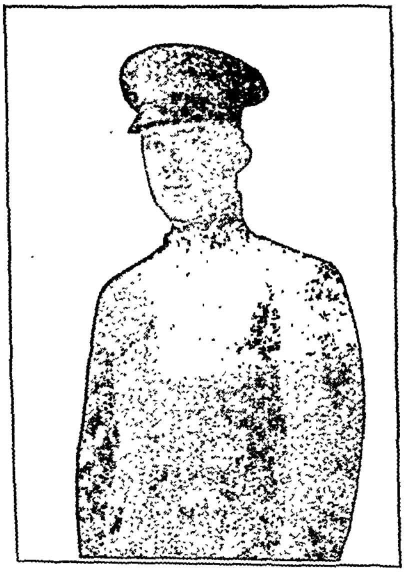
Thomas William Hovorka, St. Cloud, Minn.; Minneapolis College of Physicians and Surgeons, 1902; aged 44; a member of the Minnesota State Medical Association; died at his home, October 17, from pneumonia following influenza.

William B. Melick, Fort Edward, N. Y.; Albany, N. Y., Medical College, 1884; aged 60; a member of the Medical Society of the State of New York; at one time coroner of Washington County; died in New York City, November 3.

Lieut. Arthur Francis McQuaid ⊕ **M. C., U. S. Army,** Chicago; Loyola University, Chicago, 1915; aged 28; on duty at British war hospitals in England from October, 1917, to July, 1918, and since that time serving with the British Expeditionary Forces in Flanders and France; is reported to have been killed in action, October 15.

Glenn Charles Spurgeon ⊕ Seattle; Northwestern University Medical School, Chicago, 1904; aged 44; a member of the staff of the Eye, Ear, Nose and Throat Infirmary, Seattle; died at his home, October 29, from pneumonia following influenza.

Herman Oechsner ⊕ New Orleans; Tulane University, New Orleans, 1899; aged 56; also a graduate in pharmacy; a member of the state board of health in 1908; died at his home, September 30, from intestinal toxemia.



Died in the Service
in France
Lieut. Arthur F. McQuaid, M. C.,
U. S. Army, 1890-1918

Lieut. Harry Shafer Marcley ⊕ **M. C., U. S. Army,** New York City; University of Syracuse, N. Y., 1911; aged 32; anesthetist to the Hospital for Ruptured and Crippled, New York City; on duty at Camp Eustis, Va.; died at that place, November 18.

John Calvin McClurkin, Chicago; Bellevue Hospital Medical College, 1871; aged 78; who was operated on November 14 for cataract, jumped from a window in St. Luke's Hospital, November 24, sustaining injuries from which he died shortly after.

Joseph Francis Berghoff ⊕ Butte, Mont.; John A. Creighton Medical College, Omaha, 1913; aged 33; a member of the staff of the Montana State Hospital, Warmsprings; died in St. Ann's Hospital, Butte, November 17, from pneumonia.

Capt. Joseph E. Dudenhofer ⊕ **M. C., U. S. Army,** Erie, Pa.; Jefferson Medical College, 1911; aged 30; on duty with the American Expeditionary Forces in France; was killed in action, September 17.

Died in the Service
in France
Capt. Joseph E. Dudenhofer, M. C.,
U. S. Army, 1888-1918

Harmon Jackson Wall, Richland Center, Wis.; Rush Medical College, 1880; aged 74; a member of the State Medical Society of Wisconsin; a veteran of the Civil War; died at the home of his daughter in Milwaukee, November 14, from pneumonia.

Lieut. Malcolm Cunningham ⊕ **M. C., U. S. Army,** Chicago; Chicago College of Medicine and Surgery, 1917; aged 25; on duty with the 76th Spruce Squadron, Astoria, Ore.; died at his post, October 8, from pneumonia following influenza.

Herbert Clargo Mills, Berkeley, Calif.; College of Physicians and Surgeons of San Francisco, 1901; aged 39; a member of the Medical Society of the State of California; died at his home, October 22, from pneumonia following influenza.

John Millington, Greenwich, N. Y.; University of Michigan, Ann Arbor, 1873; aged 71; a member of the Medical Society of the State of New York; at one time health officer of Washington County; died at his home, November 3.

Frank Joseph Stoll, New York City; University of Klausenburg, Hungary, 1909; aged 34; who volunteered to assist in the influenza epidemic in Pottsville, Pa.; died in that city, October 20, from pneumonia following influenza.

David Ralph Houston, Miami, Fla.; Manitoba Medical College, Winnipeg, 1909; aged 35; for several years a practitioner of Dominion City, Manitoba; died at his home, November 15, from pneumonia following influenza.

Robert Z. Ingersoll, Seymour, Ia.; Keokuk Medical College, College of Physicians and Surgeons, 1902; aged 41; a member of the Iowa State Medical Society; died at his home, October 22, from pneumonia following influenza.

Lieut. Grover Carlisle Price ⊕ **M. C., U. S. Army,** Judson, Ind.; University of Louisville, Ky., 1909; aged 30; on duty with the American Expeditionary Forces in France; died at Toul, France, October 30, from bronchial pneumonia.

Wilson B. Shelton, Bingham, Ill.; (license, years of practice, Illinois, 1888); aged 75; a member of the Illinois State Medical Society; and a veteran of the Civil War; died at his home, November 4, from cerebral hemorrhage.

Malcolm Donald MacNab, Chicago; Rush Medical College, 1895; aged 47; at one time a member of the Illinois State Medical Society and Physicians' Club of Chicago; died at his home, November 27, from a gunshot wound.

Lieut. Timothy Gibson Sellew ⊕ **M. C., U. S. Army,** Marietta, O.; Medical College of Ohio, Cincinnati, 1901; aged 43; on duty at Camp Grant, Rockford, Ill.; died at that place, October 20, from heart disease.

Margaret Allen Judge ⊕ Erie, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1910; aged 39; died at Hamot Hospital, Erie, Pa., November 22, from influenza.

Edward A. Butts, Washington, D. C., Georgetown University, Washington, D. C., 1873; aged 72; for many years a pharmacist and manufacturing druggist; died in his apartments, October 22, from pneumonia.

James Stewart Doubleday ⊕ New York City; University of Virginia, Charlottesville, 1893; aged 43; associate physician to the Southampton, L. I., Hospital; died at his home, November 14, from pneumonia.

Lieut. Clinton Virgil Reed ⊕ **M. C., U. S. Army,** Three Forks, Mont.; Rush Medical College, 1914; aged 29; on duty with a medical unit in England; died recently from pneumonia following influenza.

Albert Garfield Porter ⊕ Terre Haute, Ind.; Indiana University, Bloomington and Indianapolis, 1909; aged 38; police surgeon of Terre Haute; died at his home, October 29, from pneumonia following influenza.

William Madison Patterson, Egan, S. D.; University of Illinois, Chicago, 1902; aged 49; for some time editor of the local paper; died at his home, about November 13, from pneumonia following influenza.

Paul Orcutt Miller, Deer Lick, Pa.; Jefferson Medical College, 1915; aged 29; formerly of Warren, Ohio; died at the University of Colorado Hospital, Boulder, November 18, from pneumonia following influenza.

John Gustaf Swensson, Portland, Ore.; State University of Iowa, Iowa City, 1897; aged 42; a member of the Oregon State Medical Association; died at his home, November 22, from heart disease.

Lieut. Millard Cressy Clark ⊕ **M. C., U. S. Army,** Bethlehem, N. H.; Tufts College Medical School, Boston, 1917; aged 25; died at Camp Gordon, Ga., September 29, from bronchopneumonia.

Ernest Boston, Palacios, Tex.; Barnes Medical College, St. Louis, 1899; aged 43; a member of the State Medical Association of Texas; died in Owensboro, Ky., November 10, from pneumonia.

Lieut. Alfred Johnson ⊕ **M. C., U. S. Army,** Clyde, Kan.; St. Louis College of Physicians and Surgeons, 1907; aged 39; on duty at San Francisco; died at his home, November 6, from influenza.

John L. Poppe, Haley, N. D.; University of Christiania, Norway, 1903; aged 35; died in St. Luke's Hospital, Aberdeen, S. D., October 27, from double lobar pneumonia following influenza.

Lieut. Leslie James Phillips ⊕ **M. C., U. S. Army,** Weyerhauser, Wis.; Queen's University, Kingston, Ont., 1912; aged 30; is reported to have died recently in France, from pneumonia.

David J. Mercer ⊕ Poe, Ind.; Fort Wayne, Ind., College of Medicine, 1901; aged 39; died in the Lutheran Hospital, Fort Wayne, Ind., November 20, from pneumonia following influenza.

Isaac Brown Jordan, Hope, Ark.; Meharry Medical College, Nashville, Tenn., 1913; aged 32; a colored practitioner; died at his home, October 10, from pneumonia following influenza.

Claude Baxley, Baltimore; University of Maryland, Baltimore, 1860; aged 80; while crossing a street in Baltimore, October 18, was struck by an automobile and instantly killed.

Angeline Mildred Lemon Dumbleton ⊕ Detroit; Cleveland College of Physicians and Surgeons, 1908; aged 31; died at her home, November 7, from pneumonia following influenza.

James R. Hughes, Atlanta, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1913; aged 36; died at his home, October 12, from pneumonia following influenza.

Robert S. Miles, Tacoma, Wash. (license, Minnesota, 1900); aged 77; formerly of Glencoe, Minn.; a practitioner since 1868; died at his home, November 16, from pneumonia.

Mary Powell Sook Thompson, Cleveland; Cleveland University of Medicine and Surgery, 1880; aged 70; died at her home, November 9, from carcinoma of the liver.

Lieut. Albert Frederick Ostwald ⊕ **M. C., U. S. Army,** Buffalo, N. Y.; University of Buffalo, N. Y., 1911; aged 35; died at his home, November 8.

George P. Hemm, Hays, Kan.; St. Louis University, 1907; aged 36; died at his home, October 10, from pneumonia following influenza.

Lewis Jerome Murphy, Los Angeles; Medical College of Indiana, Indianapolis, 1903; aged 41; died at his home, recently.

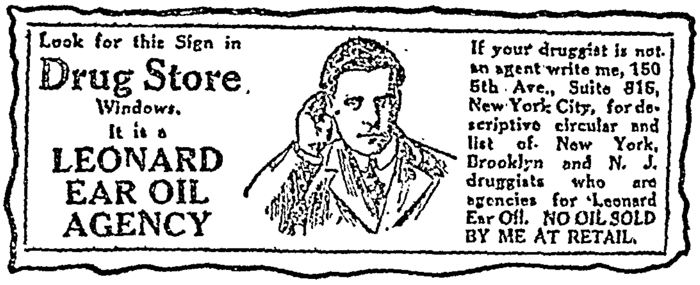
The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

LEONARD EAR OIL

Another Deafness Cure Humbug

"Leonard Ear Oil" is an alleged cure for deafness, sold by one A. O. Leonard of New York City. The present method of exploiting this nostrum is comparatively new. A few years ago Leonard was engaged in a mail-order business of selling his "Invisible Antiseptic Ear Drums." At that time his "Ear Oil" was an accessory to his "Ear Drum" trade, and constituted the "repeater" part of the business. More than four years ago, the Propaganda department collected Leonard's series of follow-up letters; these were of the usual medical mail-order fake type, with the accompanying testimonials, bulletins, etc. The price first asked for one of the "Invisible Antiseptic Ear Drums" was $5.00, which included, also, enough "ear oil" to last one month. Additional "ear oil" came "at $1.00 per bottle, for the personal use of those who purchase the drums." Before the follow-up series was complete, the price had been reduced to $2.50. The final letter contained an offer to send a bottle of Leonard's Ear Oil for $1.00, nothing being said about the "Invisible Antiseptic Ear Drum." In fact, the last letter of the series would lead its recipient to infer that the "Ear Oil" was the only thing necessary to cure deafness.



Look for this Sign in Drug Store Windows. It is a LEONARD EAR OIL AGENCY

If your druggist is not an agent write me, 150 5th Ave., Suite 816, New York City, for descriptive circular and list of New York, Brooklyn and N. J. druggists who are agencies for Leonard Ear Oil. NO OIL SOLD BY ME AT RETAIL.

Like most mail-order quacks Leonard apparently sold the original letters received from prospective victims, after they had ceased to be commercially valuable to him. At any rate a company that makes a business of buying and selling the original letters of "suckers" offered for sale, under "Deaf Letters," more than nine hundred of A. O. Leonard's vintage of 1907-08, more than five hundred of 1909-10, and more than seven hundred of 1911-12.

During the past year or two, Leonard seems to have been putting the soft pedal on the "invisible ear drum" part of his business, and playing up his "ear oil" fortissimo. Moreover, instead of selling the stuff as a mail-order proposition, Leonard now does business through drug stores. This tendency on the part of mail-order quacks to abandon the mail-order method, and conduct their business through the retail drug trade channels is an indication of the growing appreciation on the part of quacks of the protective power of the post-office fraud order. Is it also an indication of the low standard of business ethics of certain retail druggists? Leonard Ear Oil is by no means the only mail-order medical humbug that has found it safer, and doubtless more profitable, to abandon the mail-order feature and split the profits with the retail druggist.

One wonders whether the postal authorities have, during the past few years, dropped a hint to Leonard that his methods were likely to bring him into conflict with the law. This suspicion is strengthened by changes that have taken place in the character of the Leonard advertising, during the past few years. In the past we were dogmatically assured that "Leonard Ear Oil removes the mucous, opens up the tubes," etc.; now with more circumspection we are informed that "The purpose of Leonard Ear Oil is to remove the mucous, open up the tubes," etc. In 1915 Leonard Ear Oil "restored" hearing, if one were foolish enough to believe the advertising: now "restored" has given place to "improves." A further comparison between the older and newer advertising claims will indicate the change from direct falsehood to inferential misstatement:

OLDER ADVERTISING	NEWER ADVERTISING
". . . the Leonard Glandular Oil, if applied as directed will *cure* the diseased or catarrhal condition. . . ."—[Italics in original.—ED.]	". . . the Leonard Glandular Oil, if applied as directed will *relieve* the diseased or catarrhal condition. . . ."—[Italics ours.—ED.]
"Rubbing this on the glands of my throat and back of my ears night and morning, thoroughly massaging it in, I have *cured* the catarrhal condition . . ."—[Italics in original.—ED.]	"Inserting this in my nostrils and rubbing on the glands of my throat and back of my ears night and morning, thoroughly massaging it in, I have *overcome* the catarrhal condition. . . ."—[Italics in original.—ED.]
". . . it, together with my Invisible Ear Drums, has *cured* literally thousands of cases of Deafness and Head Noises that were considered hopeless."—[Italics ours.—ED.]	". . . it, together with my Invisible Ear Drums, has *relieved* literally thousands of cases of Deafness and Head Noises that were considered hopeless."—[Italics ours.—ED.]
"The imported Oil used in this preparation successfully carries the *curatives* it contains, . . . through pores of the skin to the diseased parts and effects a *cure*."—[Italics ours.—ED.]	". . . the Imported Oils used in this preparation successfully carry the *remedies* it contains to the diseased parts and *remove the cause* of Deafness and Head Noises."—[Italics ours.—ED.]

Some months age the Department of Health of the City of New York purchased specimens of Leonard Ear Oil and analyzed it. The chemist reported in effect, that the stuff had essentially the following composition:

Liquid petrolatum	41.96 per cent.
Ammonium oleate (soft soap)	8.18 per cent.
Oleic acid	14.40 per cent.
Camphor	9.85 per cent.
Eucalyptol	11.07 per cent.
Alcohol	12.00 per cent.
Water	2.54 per cent.

This would mean that Leonard Ear Oil is to all intents and purposes liquid petrolatum with camphor, eucalyptol, etc., emulsified by aid of a soft soap produced from ammonia and oleic acid. Having determined the composition of Leonard Ear Oil, the Department of Health of the City of New York lodged a complaint against Leonard, who was arrested and arraigned before the Court of Special Sessions, and adjudged guilty of making false and misleading claims. On July 14, 1918, Leonard was sentenced to thirty days in jail or to pay a fine of $250.00. Of course he didn't go to jail.

The Health Department of New York City went still further in protecting the public against this humbug. It notified all druggists in New York City that "the continued sale of Leonard Ear Oil with these false and fraudulent statements attached, will constitute a violation of Section 116 of the Sanitary Code, and will subject the druggist so doing to prosecution." Moreover, the Bureau of Public Health Education of the New York Department of Health gave the facts publicity through its *Weekly Bulletin* and its *Monthly Drug Bulletin*, and prepared an exhibit which was placed in a window on a prominent street, exposing the Leonard fakery. The exhibit consisted of two placards used by the Leonard Ear Oil concern, with a bottle of the oil itself. Alongside the original bottle were placed two other bottles, one with material which the chemist's analysis showed the bottle to contain, and another showing a bottle of the same size containing water. Under these bottles appeared the following legends:

Bottle No. 1—"Leonard's Ear Oil. This preparation costs you $1.00. The Courts of this City have declared that the claims made as to the medicinal value of the preparation are false and misleading."

Bottle No. 2—"This preparation is, analytically, the same as 'Leonard's Ear Oil' and may be purchased at an ordinary drug store for about 20 cents."

Bottle No. 3—"This bottle contains water and is just as good as 'Leonard's Ear Oil' for deafness. The cost to you is only the price of the bottle."

This was last summer. Since that time another city—Cleveland, Ohio, which makes an effective attempt to protect its citizens from fraud in medicine—has taken action on the Leonard Ear Oil. Under date of November 4, the Commissioner of Health of the City of Cleveland issued an order to Cleveland dealers relative to the sale of the Leonard preparation. This order read as follows:

> "Informing retail dealers that Leonard Ear Oil has been examined by this department and found to be a misbranded product within the meaning of the laws applying to Cleveland in that the claims made for this product are false and fraudulent, and its sale is therefore contrary to the best interests of the public health of this city.
>
> "Dealers in Cleveland are hereby notified to discontinue the sale or offering for sale of Leonard Ear Oil."

As Leonard has ceased selling his stuff on the mail-order plan, he is no longer amenable to prosecution by the post-office authorities. As he doubtless is careful to avoid making false and fraudulent claims for his product on the *trade package*, he can not be prosecuted under the Federal Food and Drugs Act. There is nothing, however, to prevent him making all the misleading claims he wishes to, regarding his nostrum, if he confines these claims to circular matter or window displays distributed through drug stores, and newspaper advertisements. That is, there is nothing to prevent this, unless city or state health authorities follow the lead of New York City and Cleveland. Will they do it?

Correspondence

"A REGISTRATION FEE FOR PHYSICIANS"

To the Editor:—In THE JOURNAL, Nov. 16, 1918, p. 1629, is an article by Francis W. Shepardson entitled "A Registration Fee for Physicians." About the time I finished reading the article the mail brought me a letter from the author asking the names of three physicians of our county (Christian) to whom he might write and at the same time asking me to express my opinion of the measure. As it is a matter of interest and importance to the physicians of the state I am offering my comments through THE JOURNAL in the hope that others may be interested and, perhaps, express their approval or objections to the proposed measure.

Mr. Shepardson admits, by implication, that he is biased in his views and proceeds to point out the shortcomings of the medical profession in Illinois. He says that we have a very poorly organized profession; but aside from the one point of numbers he does not say in what manner we are lacking. Were he to investigate, he would probably find that in our state we are as well organized, both in the state and county organizations, as physicians are in other states.

He next points with pride to a formidable array of quacks and charlatans, who he seems to think are fostered by the medical profession of this state, regardless of the fact that through our state society we have begged the legislature from year to year for laws ridding the public of these various pretenders and as often have been turned down and the people of the state left to the impositions of the whole band. Why should he blame the medical profession for the existence of all these fake doctors when it is the laymen—the boasted "neutrals"—who through their representatives have passed the laws permitting them to exist and that, too, against the bitter protest of the medical profession?

He mentions the abortionist and other evil doers in our midst, but also points out that the prosecuting attorneys (neutrals, also?) have either refused to take up the cases or managed in some way to sidetrack them. He says that some of these cases failed because physicians were unwilling "to give testimony or to encourage deluded victims to give the department the legal use of the information given them in the quiet hours of confession," but he does not even suggest why these physicians refused to commit themselves.

When the state and the people sanction and legalize all these frauds, is it incumbent on the physician to injure himself when he knows he would only be censured for meddling?

Mr. Shepardson says there are more fakers and charlatans in medicine than in all the other professions and trades combined. This is probably true; and they flourish because the legislature, which represents the public, has persistently refused to give us laws to suppress them, and because the paid officials of the state are unwilling to perform their plain duty to the public, as Mr. Shepardson himself points out.

I might suggest right here that it is not by the sanction of the medical society of the state or any of its component societies that these evils exist any more than it is that nearly every newspaper carries advertisements of the most glaring frauds of "cancer cures," "consumption cures," "dissolving cataracts," etc. These advertisements are carried under state and national laws despite the most strenuous protests of the medical profession, although Mr. Shepardson, by implication at least, seems to think we are to blame for it.

In his comments on medical education I have no criticism, and the medical profession in general is pleased with the advanced standard of our medical courses. But this was not brought about by "neutral regulators" but by the advanced ideas of the physicians who constitute our medical societies.

Under the heading "Regulation of Practitioners," he points to nine different items under which revocation of license may be secured, but does not say how the proposed "regulation" of physicians is to secure such penalties or even the prosecutions for the offenses. There is no indication that the laws would be changed or that more direct evidence would be produced thereby for the prosecution of such cases, or that the prosecuting attorneys would change their habits in putting off these cases, as mentioned above. The quack who goes from town to town advertising to be a "specialist" on every disease to which human flesh is heir would be as free from prosecution as he now is; and if there are to be prosecutions at all, they will have to be made in the same manner as they now are, to wit: The physicians or others must lay in the complaint and furnish the evidence.

Mr. Shepardson points out that since the first registration law of 1877 went into effect there have been 29,936 individuals licensed, and adds, "How many of these licenses are active at the present time nobody knows." This is, no doubt, true; but would this annual registration correct the matter? Many have died, some moved to other states, some retired, and a *few* had their licenses revoked. Some may be practicing under fraudulent registration and, if so, all they have to do is to send in their fee and get a renewal card which they may hang in their offices and point to with assumed pride when their patrons come in, and thus continue their illegal practice as before. Why, therefore, resort to the proposed annual registration when we have a much better, more economical and easier method of finding and reporting these impostors? By sending the lists of physicians as already recorded to the secretaries of the various counties the lists may be verified or corrected as may be, and a far more correct list obtained than by annual registration.

Those secretaries who have served a year or two, and most of them serve long terms, know more of the physicians in any particular county than any registration would find out in ten years, and at no expense at all unless it be a mere matter of postage. Secretaries are always ready to correct these lists, and usually know every physician in their county.

It is true, no doubt, that the lists in the directory of the American Medical Association are not always perfect, and the same may be said of the one from the state board of health; but they are probably fully as correct as the one under the proposed registration would be, and with equal care in compiling and cooperating with the county secretaries would be more so with the added opportunity of corralling those who registered illegally, as, for instance, when they are registered on a diploma or examination not their own; for when the board of censors of the county society recommends a man for membership in a county society, they inquire very carefully into his standing, his graduation, etc., and have a much better opportunity to do so than that afforded by simply the payment of a registration fee.

In the fourth item of "advantages" it is claimed that the state would have better control over unethical practitioners; but a registration does not give us a law to punish the offenders. It is easy enough to find the unethical and fraudulent practitioner. What we want and need is the means of getting rid of him, and there is nothing even suggested in Mr. Shepardson's article whereby this may be accomplished any better by registration than under present conditions.

As regards the fee of two dollars, that is not much; and if there were a prospect of getting results there is not a reputable physician in the state who would not gladly pay it and be the gainer thereby; but for the reasons given, it seems to me to be an entirely useless cumbrance of the law and an annoyance to the members of the profession. Nor am I alone in this view. While writing these pages I took a little time off to inquire what benefits were gained by those who were already "regulated." I made the rounds of the undertakers, the barbers, the dentists, the jewelers and the plumbers; and of all these only three persons thought there was any benefit at all and the rest promptly and emphatically said "no," and usually added that the only ones benefited by the annual registration were those who got the jobs of keeping the records and collecting the fees. One barber, only, thought there might be some benefit by limiting his profession against itinerants; but he could not mention a single instance to support his belief. One dentist thought there might be some benefit, gave the same reason the barber did, and cited one instance in which a dentist was excluded from practice in the state; but later in the evening he met me on his way home and said that the exclusion was due to the fact that he was not registered at all in the state and not that the annual registration had kept him out. I saw one plumber and he thought there "might" be some benefit in the registration, but could not mention any instance in which the benefit had actually been observed.

It is my firm belief that if we could only get the laws, and honest, efficient officials to execute them, there would be no need of any regulation by laymen, no matter how "neutral" they may be.

D. D. Barr, M.D., Taylorville, Ill.

EPIDEMIC INFLUENZA IN PRIVATE PRACTICE

To the Editor:—The pandemic reached Hartford about the middle of September, reached its greatest pace about September 28, and from then on raged fiercely until October 21, when it began to recede. The number of deaths was 586 resident and 137 from out of town. The population is estimated at 145,000, thus giving a death rate of 4 per thousand. The number of influenza cases was about 23,000.

The schools and theaters were not closed here, and from the manner in which the epidemic spread they apparently were not an important factor in disseminating the disease. The epidemic raged most intensely in the crowded tenement districts. Proportionately, the Jews were hit harder probably than any other group of peoples. They were affected first and in great numbers. The northeast section, populated by Jews, Russians and Italians for the most part, was in the grip of the epidemic for a week before it spread to the east side (adjacent), populated mainly by Italians and Russians. In the latter days of the epidemic the south end of the city had more cases than the other sections. The hospitals were overcrowded and able to admit only a small portion of the patients needing admission. An emergency hospital was opened about October 15. It did good work, but was really too late to do the most good.

The subjoined observations were made from approximately 500 cases seen in private practice. As elsewhere, the fatalities were chiefly among the 20 to 35 age group. Similarly the prognosis was better for those over 40. Elderly patients were rare. It was a question whether it was more frequent for a child or an adult to bring the disease into the family.

Epistaxis was common, occurring in from 10 to 15 per cent. of the cases. Some of these resulted in pneumonia. The headache and backache frequently persisted for three or four days. The temperature on the first day was between 101 and 104. A feature of the temperature was its variability during the day, rising and falling at irregular intervals. In the ordinary case the temperature persisted for from two to five days. Sweating was common even without medication or hot drinks. The bowels were inclined to be constipated. There was a general but slight enlargement of the lymph nodes. The spleen was not palpable. The pulse was relatively slow in many cases, but was not always so.

In regard to treatment, no particular drug had special virtues. Rest in bed, fresh air, light, nourishing food, plenty of water and open bowels were the main reliances. A simple expectorant cough mixture, sometimes with the addition of codein, sufficed for internal medication in the ordinary case. Alcohol rubs were soothing when the temperature was high. For the heaviness and soreness in the chest, home-made mustard plasters undoubtedly gave relief. The "fever and pain" powders or capsules, as were ordinarily prescribed, frequently only increased the prostration, and in a few cases in which the patient had taken a number of them, it seemed to prolong their convalescence. This type of medication was frequently more harmful for the patient than the pain for which it was intended.

In the pneumonias, stimulation did not seem to stimulate. It was rare to find pneumonia develop in a patient who took to bed at the onset of his influenza, and have it set in before convalescence, but it did occur. Pneumonia usually occurred after too early getting out of bed, or from too strenuous efforts after or during convalescence.

Three cases of the meningeal type of influenza were encountered. Prompt spinal puncture with withdrawal of excess fluid which was under pressure gave immediate relief. These cases were recognized by unconsciousness chiefly, with variable rigidity of neck, convulsions, involuntaries, dilatation of pupils and vomiting. In one of these cases, in which spinal puncture was delayed, recovery was slower than in the other two.

HARRY BERMAN, M.D., Hartford, Conn.

PREVENTION OF INFLUENZA BY OSMOTIC ACTION IN AIR PASSAGES

To the Editor:—The infection of influenza unquestionably enters the system through the nasal spaces and upper air passages. This fact is practically proved by a mode of disinfection and cleansing of those spaces and surfaces which I have suggested and used in the case of many thousand individuals who would ordinarily be considered likely subjects to infection. Infection was prevented in practically 100 per cent. when the treatment was properly used.

The tortuosities of the nasal and postnasal spaces and their great extent make the use of the many remedies suggested ineffective, because, however excellent they may be in themselves, they do not reach all the surfaces involved and they furthermore lack certain physical qualities necessary to invite a sufficient and strong osmotic action.

A powder composed of impalpable boric acid, 95 parts, sodium bicarbonate, 3 parts, and calomel, 2 parts, thoroughly triturated, is the basis of treatment.

With a good powder blower, this powder is freely blown into the nose, and will reach every recess in the upper air passages, and does not seem irritating to any extent. This powder, by abstraction of liquids from the moist surfaces, dissolves, excepting the calomel, and will shortly cause a mucoserous flow induced by osmotic pressure, and during this process the membranes involved are thoroughly washed and disinfected by virtue of the double osmotic current induced. This mucoid secretion can then be discharged, and the process repeated after from four to six hours. Ordinarily, the use of this powder once a day will suffice to keep the nasal membranes in fine condition and free from infections.

JAMES A. BACH, M.D., Milwaukee.

THE CIVILIAN PHYSICIAN'S SACRIFICE

To the Editor:—May I ask why as my husband was a victim on the long list of doctors who succumbed to the terrible epidemic last month no mention is made in any periodical or public newspaper of these noble fellows who gave their lives in fighting this disease? Are they not to be mentioned in any way as heroes?

The sacrifices of physicians in this section of our country was greater than the people of closely populated districts during the past four years of war can conceive, as the distance they must cover is great, and doctors are few. My husband for the past year has practiced alone in this county his nearest town being 28 miles away, the farthest, 75 miles. He could not enter the Army on account of being tuberculous. When he died he had worked night and day for two weeks *alone* trying to save people in this county.

Another tuberculous doctor from an adjacent county came over and took up the fight, leaving a little doctor in his place who left a tuberculosis sanatorium in El Paso, to aid the people. I am sure similar cases could be brought to mind over our country. Is there no memorial for these gallant men?

MRS. LONGINO, Fort Stockton, Texas.

THREE SIGNS OF SOME VALUE IN THE DIAGNOSIS OF UNUSUAL CASES OF INFLUENZA

To the Editor:—The last epidemic of influenza has been confined almost entirely to inflammatory changes in the respiratory tract. While it is true that there have been occasional instances in which the whole brunt of the disease has been borne by other systems, these could be diagnosticated only by inference as (1) the presence of the epidemic; (2) attacks of well-marked respiratory influenza in other members of the same family, or (3) previous similar attacks, unquestionably of influenzal nature in the same individual. Even here, in many instances, on close questioning, it could be ascertained that there was an occasional sneeze four or five days before the onset of the disease.

In these out-of-the-ordinary attacks, the nervous system was the one commonly involved. However, 95 per cent. of the cases seen in this epidemic involved the respiratory system, and the diagnosis was almost always made within two or three minutes after seeing the patient. Now and again in an isolated case of this type the question was raised in the mind of the practitioner "whether or not one was dealing with an influenza or with an ordinary head cold or coryza," such as is not uncommon at this time of the year. The absence of early rise of temperature and pulse and respiration changes in some of the influenza cases made this often a puzzling problem. Most physicians "played safe" and diagnosticated all of such cases as influenza. This was eminently fit and proper.

1. In a large number of true cases of influenza of the respiratory tract I have noticed a sign that may at times be of some help from a diagnostic standpoint. It has not to my knowledge been described before. It consists of a very marked redness of the opening of the salivary or Steno's duct, just opposite the second molar tooth. The punctum is usually swollen and raised above the level of the cheek, and the red spot is seen in the center. Mere swelling of the punctum has no diagnostic import. It may easily be inspected by placing a spoon handle in the side of the mouth and retracting it. If the sign is present on one side it is almost always visible on the other as well. It is not invariably present, but can be seen in at least 70 per cent. of the cases.

It has been present in most of the sporadic cases, and here is of very considerable value.

2. The presence of fine crackles at both bases of the lungs posteriorly near the vertebrae is prima facie evidence of influenza in a case in which there is a history of an acute onset. In old persons who have been lying down for some time, in cardiacs with broken compensation and in cachexia of any kind, this criterion is valueless, because such râles are commonly present without influenza.

3. After the disease has spent itself, frequently a harassing cough persists. This cough resembles whooping cough more than anything else. On listening to one such paroxysm without a history, it is almost impossible to make a diagnosis from early whooping cough. On inspection, however, one will in these cases find a redness over the arches of the palate. This is from ⅓ to ¼ inch in width; sometimes it extends only half way up on the sides and at other times it makes a complete arch. It is seldom or never missing in this type of cough due to influenza.

Incidentally, by touching the pillars and the nasopharynx with a silver nitrate solution, more good will be done than by the ingestion of many pints of cough mixture.

Thomas F. Reilly, M.D., New York.

GOVERNMENT RESPONSIBILITY TO THE STUDENT

To the Editor:—The government has taken over the military control of the medical schools, enlisted the students, and has agreed to pay their tuition fee, their board, and $30 a month. I understand that now that peace is in view the government is going to give this up, which is all right, but the students expect to have this year's teachings under the above terms, and now are not prepared to suddenly pay the expense for the balance of the term. So it seems to me that the government, even if it gives up the military control of all schools ought to carry out at least the financial agreement with the students until the end of the year. Not to do this would be a great injustice to some of the poorer students.

J. H. Carstens, M.D., Detroit.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

STATUS OF RESERVE OFFICERS IN DEMOBILIZATION

To the Editor:—Please inform me as to the exact status of the Medical Reserve Corps with reference to the Army. Was the Medical Reserve Corps abolished? Was there a Medical Reserve on Nov. 1, 1918, of any kind? Is there a Medical Reserve Corps for doctors and students separately?

C. R. Kessel, Morgantown, W. Va.

Answer.—As stated elsewhere in this issue, in the demobilization of officers of the Army those whose services are no longer needed will be given an honorable discharge. Such discharges will be a complete separation from the service. Opportunity will then be given to them to express their desire to reenter the Officers' Reserve Corps, Medical Section. Other officers who are qualified may enter the regular Army. The granting of new commissions will be dependent on individual fitness, eligibility and number of vacancies as provided by existing or future legislation. Although all of the officers of the Reserve Corps were originally commissioned for five years, commissioning for the period of the emergency was, it is reported, made by G. O. No. 73 which terminated the five year provision. This made all men officers of the Medical Corps. It has been reported that legislation will be presented to Congress for the reorganization of the Army whereby suitable arrangements may be made for commissioning in the regular Army and in the Officers' Reserve Corps men who have served in the present war. Under the National Defense Act of 1916 there was both an Officers' Reserve Corps and an Enlisted Reserve Corps so that medical students were made eligible for the Enlisted Medical Reserve Corps.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alabama: Montgomery, Jan. 14. Chairman, Dr. S. W. Welch, Montgomery.

Arizona: Phoenix, Jan. 7. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.

Colorado: Denver, Jan. 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Delaware: Wilmington, Dec. 10-12. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

District of Columbia: Washington, Jan. 14-16. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

Florida (E): Jacksonville, Dec. 16-17. Sec., Dr. G. A. Munch, 1806 Franklin St., Tampa.

Hawaii: Honolulu, Jan. 6. Sec., Dr. J. R. Judd, Honolulu.

Illinois: Chicago, Dec. 9-11. Mr. F. C. Dodds, Supt. of Registration, Springfield.

Iowa: Des Moines, Dec. 10-12. Sec., Dr. G. H. Sumner, Capitol Bldg., Des Moines.

Minnesota: Minneapolis, Jan. 7-10. Sec., Dr. Thomas McDavitt, 741 Lowry Bldg., St. Paul.

New Mexico: Sante Fe, Jan. 13. Sec., Dr. W. E. Kaser, East Las Vegas.

North Dakota: Jan. 7. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.

Oklahoma: Oklahoma City, Jan. 7-8. Sec., Dr. J. J. Williams, Weatherford.

Oregon: Portland, Jan. 7. Sec., Dr. H. S. Nichols, Corbett Bldg., Portland.

Pennsylvania: Philadelphia, Jan. 7-9. Sec., Mr. Nathan C. Schaeffer, State Capitol, Harrisburg.

Rhode Island: Providence, Jan. 2-3. Sec., Dr. B. U. Richards, State House, Providence.

South Dakota: Pierre, Jan. 14. Sec., Dr. P. B. Jenkins, Waubay.

Utah: Salt Lake City, Jan. 6. Corres. Sec., Dr. G. F. Harding, 405 Templeton Bldg., Salt Lake City.

Virginia: Richmond, Dec. 10-13. Sec., Dr. J. W. Preston, 215 S. Jefferson St., Roanoke.

Washington: Spokane, Jan. 7-9. Sec., Dr. C. N. Suttner, 415 Old Nat'l Bk. Bldg., Spokane.

Wisconsin: Madison, Jan. 14. Sec., Dr. J. M. Dodd, 220 E. 2d St., Ashland.

District of Columbia October Examination

Dr. Edgar P. Copeland, secretary of the Board of Medical Supervisors of the District of Columbia, reports the oral and written examination held at Washington, Oct. 8-10, 1918. The examination covered 16 subjects and included 80 questions. An average of 70 per cent. was required to pass. Of the 7 candidates examined, 6 passed and 1 failed. Two candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Georgetown University (1918) 79.2, 85.6, 88.4.		
George Washington University	(1918)	90
Howard University	(1918)	80.6
University of Maryland	(1917)	82.5
FAILED		
University of Nashville	(1893)	16

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Georgetown University	(1914)	Maine
Bowdoin Medical College	(1916)	Maine

Illinois June Examination

Mr. F. C. Dodds, superintendent of registration, Department of Registration and Education, reports the practical and written examination held at Chicago, June 3-6, 1918. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 232 candidates examined, 203 passed and 28 failed. One candidate did not complete the examination. The following colleges were represented:

College	Year Grad.	No. Licensed
PASSED		
Howard University	(1918)	1
Chicago Coll. of Med. and Surg.	(1915) (1917, 2); (1918, 68)	71
Hahnemann Med. Coll. and Hosp. of Chicago	(1918)	14
Loyola University	(1916, 2) (1917, 2)	4
Northwestern University	(1918)	52
Rush Medical College	(1918)	37*
University of Illinois	(1918)	20
Washington University	(1918)	1
University and Bellevue Hosp. Med. Coll.	(1916)	1
Queen's University	(1917)	1
University of Kharkov	(1914)	1

FAILED		
Chicago Hospital College of Medicine	(1915)	2
Chicago College of Med. and Surg.	(1917, 5) (1918, 7)	12
Jenner Medical College	(1910) (1911) (1917)	3
Loyola University	(1916) (1917)	2
Northwestern University	(1918)	1
Rush Medical College	(1918)	1*
Boston University	(1911)	1
University Medical College of K. C.	(1900)	1
Meharry Medical College	(1912) (1913) (1915) (1916) (1917)	5

*Degrees for 32 of these candidates were withheld, pending completion of hospital internship.

Book Notices

COMMOTIONS ET EMOTIONS DE GUERRE. Par André Léri, Professor agrégé à la Faculté de Paris. Préface du Professeur Pierre Marie. Paper. Price, 4 francs. Pp. 196, with illustrations. Paris: Masson et Cie, 1918.

When the war began, the French had a great advantage. They knew more of nervous diseases than any other nation and they had a greater number of trained observers in this department. Consequently, they more quickly sized up the situation and more promptly had a fairly adequate organization to handle nervously sick soldiers. Naturally they have gone farther than the rest and are in a position to teach. This is exemplified in the present small book, which is limited to what the author calls the *commotionné*, the *contusionné* and the *emotionné*. We may say that he treats of patients suffering from concussion and contusion of the central nervous system and the war neuroses. He has the great advantage of having served at the front, in the immediate rear and in a neuropsychiatric center of the interior. Each of the three classes of cases by no means presents the same clinical picture at the three different stations, and the author gives us the benefit of his unusual experience by considering each class of trouble (*a*) on the battlefield and at the first aid station; (*b*) at the evacuation hospital (à l'ambulance), and (*c*) at the base hospital or convalescent center. The descriptions are remarkably clear, and the illustrative cases cited are illuminating. It cannot be said that all of the opinions expressed are shared by the author's colleagues; but the book is fairly representative of French war neurology, which is the best that there is. It is condensed, is a small mine of information, and should be in the hands of every reader of French who is interested in what war (and other things) can do to the nervous system.

THE NORMAL AND PATHOLOGICAL HISTOLOGY OF THE MOUTH. Being the Second Edition of the Histology and Patho-Histology of the Teeth and Associated Parts. By Arthur Hopewell-Smith, L.R.C.P., M.R.C.S., L.D.S., Professor of Dental Histology, Pathology and Comparative Odontology, University of Pennsylvania. Volume I—Normal Histology. Cloth. Price $4.50 net. Pp. 345, with 264 illustrations. Philadelphia: P. Blakiston's Son & Co., 1918.

This volume is divided into three parts. The first contains chapters on Nasmyth's membrane, the enamel, the dentin, the cementum, structural modifications of the tissues, the dental pulp and the alveolodental periosteum. The second part deals with the oral cavity and its accessories, including the lips, cheek and tongue, glands, palate and tonsils; the maxillary and mandibular bones, and a group of minor structures, including the absorbent organ, the dental capsule, the gum and the mucous membrane of the maxillary sinus. The third part is devoted to the development of the teeth in mammals, fishes, reptiles and batrachians. The appendix has a note on the functions of the cells of the dental pulp and on the absorption of the alveolar process. The work is encylopedic in character, giving the views of many investigators on each subject. This makes it of value to those who are able to analyze the material for themselves, but is apt to confuse the average student. The work is strongly colored by the author's views, especially concerning Nasmyth's membrane, the cementum and the dental pulp. The author's statements in regard to the lymphatic vessels seem hardly justified in view of the work of Schytzer, and the more recent confirmation of his work in this country. The volume is well illustrated.

Medicolegal

Privileged Communications—Admissibility of Evidence

(Dodd v. State (Texas), 201 S. W. R. 1014)

The Court of Criminal Appeals of Texas, in affirming a judgment of conviction of defendant Dodd of rape in this case, wherein the death penalty was assessed, says that the defendant set up insanity as a defensé. A physician, an expert on insanity, who appeared to have been present at the trial as a witness, was called by the state in rebuttal, and objected to testifying because he had been employed by the defendant to make an examination of him with reference to his sanity, and that he desired to be exempt from the necessity of giving his opinion on account of the confidential relationship existing between him, a physician, and the defendant, his patient. The court, without objection from the defendant, excused the witness, and at the end of the trial the defendant requested the court to instruct the jury to disregard the incident just related. The defendant presented no authority sustaining the contention that there was error thus disclosed, and this court has found none. The physician was a witness, and the state's counsel appeared to have been within his rights to call him to testify, and so far as this court was advised, to require him to testify, so far as the inhibition of privileged communications touched the subject. The general rule is that communications between physician and patient in the absence of statute are not privileged. The courts recognize that there are many reasons for regarding the communications between physician and patient as privileged when the patient seeks the physician for medical aid, and in many states statutes have been enacted on the subject. It has been held, however, that when the consultation is not for medical aid, these reasons do not obtain. Whatever the rule, there is no statute in this state exempting such communications

When insanity is an issue, it is competent for the state to call witnesses to prove the conversations and conduct of an accused, not admitting guilt, while in jail as a basis for an opinion as to the sanity or insanity.

If evidence that the hymen of the prosecutrix had been previously ruptured by an operation was material and admissible, the proof of it should have been made by direct inquiry of her as to the fact. Her statement to a physician would have been hearsay, not competent to prove the fact, but available only to impeach the prosecuting witness if on inquiry of her she had denied the fact that the operation had taken place.

Test of a Hospital as a Public Charity and Why Exempted from Taxation

(Lutheran Hospital Association of South Dakota v. Baker, County Treasurer (S. D.), 167 N. W. R. 148)

The Supreme Court of South Dakota, in reversing a judgment that was rendered in favor of the defendant in this action to recover certain taxes levied against the property of the plaintiff and paid under protest, holds that the plaintiff was a corporation or society organized and conducted exclusively for charitable purposes, and that its property was being used exclusively for such purpose and was exempt from taxation, under the state statute providing that all property belonging to any charitable society or used exclusively for charitable purposes shall be exempt from taxation. The court says that the criterion in this class of cases seems to be that whatever is done or given gratuitously in the relief of public burdens or for the advancement of the public good is a public charity, and an institution founded as a purely public charity does not lose its character as such under the tax laws if it receives a revenue from the recipients of its bounty sufficient to keep it in operation; or, applying another test, if the object for which an institution is founded is the general public good, and not private gain, and it is so conducted that the public receives all the benefits of it, it is purely a public charity. Indefiniteness of beneficiaries is one of the characteristics of a charitable use. A public charity may be open to all mankind, or the officers, thereof may be empowered to select beneficiaries from designated classes of humanity. The fact that the plaintiff had a department for training nurses was not in conflict with its charitable purpose. It was just as necessary to have trained nurses as any other appliance. Common observation would say that one of the most efficient methods for procuring trained nurses would be to do your own training, so that no private profit resulted therefrom. So training, and having on hand at all times when needed, well-trained nurses, would improve the facilities of the institution for caring for the sick. The existence in a community of such an institution which admits, cares for, and gives medical aid to the pauper as well as the prince, without private gain to itself, is a public charity in the fullest sense. Very fortunate, indeed, is the community which has situated in its midst such an institution, organized and conducted as the one in question. It relieves the public from maintaining by taxation such an institution of its own. This is the basic reason for the exemption from taxation of the property of such institutions, when it is used exclusively for the purposes of charity.

Time from and for Which After Injury Medical Services May Be Compensated

(Cooke v. Holland Furnace Co. et al. (Mich.), 166 N. W. R. 1013, McMullen v. Gavette Construction Co. et al. (Mich.), 166 N. W. R. 1019)

The Supreme Court of Michigan says, in the first case, in which it reverses and vacates an award of the industrial accident board for compensation and for medical services rendered nearly a year after the date of the injury of the employee, that it was confronted for the first time with the question of whether the statute begins to run from the date of disability (or ascertainment and definite satisfaction that disability exists), or from the date of the accident, in the provisions of the employers' liability law that during the first three weeks after the injury the employer shall furnish, or cause to be furnished, reasonable medical and hospital services and medicines when they are needed, as to the time after the injury within which notice shall be given to the employer, and that within which claim for compensation shall be made. The court comes to the conclusion that it is compelled to hold, must hold, unless it resorts to judicial legislation, that the legislature by the two sections containing these provisions fixed the date of the injury at the date of the accident, and not some remote date thereafter, when the injured employee became definitely satisfied that he was disabled as a result of the accident.

In other words, as stated in the second case, decided on the same day as the first and wherein an award is also vacated, the court says that it held in the first case that the date of the accident fixed the date of the injury, under the workmen's compensation act, and that the industrial accident board was not authorized by the act to award and compensate the employee for medical and hospital services performed more than three weeks after the accident. The authority for such allowance by the board does not exist, except per force of the statute, and the legislative judgment has limited the allowance to such services as are performed during the first three weeks after the injury. Nor has the board authority to award as damages the amount paid for such services performed at a later date, on the theory, ingeniously advanced, that the failure to furnish proper medical and hospital services created a liability for the payment of such services so performed, which may be awarded by the board as damages.

Society Proceedings

COMING MEETINGS

American Physiological Society, Baltimore, Dec. 30-Jan. 1.
American Public Health Association, Chicago, Dec. 9-12.
Medical Association of Porto Rico, Ponce, Dec. 14-15.
Society of American Bacteriologists, Boston, Dec. 30-Jan. 1.
Southern Surgical Association, Baltimore, Dec. 17-19.
Western Surgical Association, Chicago, Dec. 20-21.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

November, 1918, 47, No. 2

1 Quantitative Studies on Intracellular Respiration. E. J. Lund, Minneapolis.—p. 167.
2 *Effect of Epinephrin on Fatigue Produced by Injection of Fatigue Products, Lactic Acid and Acid Potassium Phosphate. C. M. Gruber and O. S. Kretschmer.—p. 178.
3 *Antagonistic Action of Epinephrin to Fatigue Produced by Perfusion of Acid Sodium Phosphate. C. M. Gruber.—p. 185.
4 Influence of Alkali Administration on Urinary Excretion of Lactic Acid; Significance of Latter in Maintaining Neutrality in Body. J. J. R. Macleod and H. J. Knapp, Cleveland.—p. 189.
5 *Variations in Flexion and Crossed-Extension Thresholds in Experimental Traumatic Shock, with Coincident Blood Pressure Changes. E. L. Porter, Philadelphia.—p. 208.
6 Viscosity of Urine. R. Burton-Opitz and R. Dinegar, New York.—p. 220.
7 *Experimental Surgical Shock. F. C. Mann, Rochester, Minn.—p. 231.
8 Photochemical Effect of Certain Fluorescent Substances on Rennin. J. H. Clark, Baltimore.—p. 251.
9 Nature of Sensory Stimulation by Salts. M. Irwin.—p. 265.
10 *Secretory Pressure of Liver with Special Reference to Presence or Absence of Gallbladder. F. C. Mann and J. P. Foster, Rochester, Minn.—p. 278.

2. ***Effect of Epinephrin on Fatigue Produced by Injection of Fatigue Products.***—In this research the authors endeavored to determine whether epinephrin, which possesses the ability to increase the height of contraction and increase the decreased threshold irritability of a fatigued muscle, would counteract the fatigue produced by perfusing moderately strong solutions of fatigue substances through the muscle. It was found that epinephrin (0.5 to 1 c.c. of a 1:1,000 solution) counteracts the induced fatigue produced by the perfusion of fatigue substances such as sarcolactic acid, lactic acid and acid potassium phosphate through the muscle in identically the same way as it does the fatigue produced normally in active muscles. Epinephrin in some cases has no bettering effect. In these muscles it also has no ability to produce vasoconstriction.

3. **Effect of Epinephrin on Fatigue Produced by Perfusion of Acid Sodium Phosphate.**—Gruber found that epinephrin counteracts the fatigue produced by the perfusion of acid sodium phosphate as tested by the changes in the height of muscular contraction. In all cases in which a marked recovery was obtained, epinephrin caused an almost complete cessation of the passage of the perfusion fluid through the muscle.

5. **Nervous Reflexes in Experimental Traumatic Shock.**—The outstanding features in the results of Porter's investigation are as follows: Manipulation of the intestines in the spinal cat (a cat deprived of its brain) resulted in raising the threshold of the crossed extension reflex in all cases, and of the flexion reflex in roughly 50 per cent. of the experimental animals. Increase in threshold may be evident less than a minute after manipulation has commenced. Recovery may be complete or incomplete, prompt or delayed. It is more likely to be prompt and complete in the case of flexion than of crossed extension. The flexion reflex is never completely lost as a result of the manipulation; crossed extension often is lost. A case is described in which this did not occur until some minutes after the manipulation had ceased. The changes in reflex threshold are not dependent on a decrease in blood pressure; on the contrary, the blood pressure rises momentarily as manipulation starts, and this may coincide with the rise in reflex threshold. After the momentary rise, the blood pressure decreases steadily as the experiment proceeds, and the original reflex threshold may be recovered under a lower blood pressure than existed before the manipulation. The suggestion is made by Porter that if pain in the conscious animal could be measured during intestinal manipulation, it is probable that its threshold would show alterations roughly paralleling those of the reflex thresholds described in this paper.

7. **Experimental Surgical Shock.**—All of Mann's experiments were performed under ether anesthesia. By the manipulations of the various tensions of ether it is possible to parallel the various stages and signs of shock. Under high tensions the blood pressure is decreased and all the other symptoms follow. However, it is quite possible to saturate an animal with ether at a tension just slightly lower than that necessary to abolish the eye reflex and to produce an obtundity of the reflexes without decreasing the blood pressure to a shock level. It is possible to obtain such results with a certainty only when the ether is administered mechanically and is not dependent in any way on the respiratory efforts of the animal. In a study of the vascular and respiratory reflexes under various tensions of ether it was found that all the respiratory reflexes, except that which produces inhibition of respiratory movements, disappeared before the respiratory center failed. The excitatory respiratory reflexes disappear under a relatively high tenson of ether. On the contrary, instead of a depression of the inhibitory reflex being caused by ether, a relative increase, at least, is quite common. Thus it was possible under deep etherization, in some instances, actually to kill an animal by prolonged stimulation of the nerve fibers that inhibit respiration.

It was believed that this phenomenon might have some bearing on the shock problem; a more complete study of it was therefore made, and the following suggestive facts were obtained: The inhibitory reflex of respiration is decreased or completely abolished during periods of hyperpnea; the period of apnea following hyperpnea under light ether anesthesia is not increased by the stimulation of the nerves which inhibit respiration, and the inhibitory reflex is decreased or abolished during the period of increased respiratory movements in the first stage of asphyxia. An animal cannot be killed by reflex inhibition of respiration during the first stage of asphyxia. However, as asphyxia is prolonged and the respiratory movements begin to decrease, stimulation of inhibitory nerves will inhibit respiration and in many experiments produce sudden death.

In some experiments, while the time during which respiration is inhibited under deep ether is greatly increased over that under light ether, death cannot be produced. A slight period of asphyxia will increase the time of inhibition so that death will occur. It would seem that the lack of oxygen may be a factor. Inhibition of respiration under deep etherization frequently produces death very quickly. The blood pressure usually decreases at once and the heart soon stops beating. This result would seem to imply that death was due to or associated with other factors than asphyxia. However, a comparison of the curves in instances in which death was due to asphyxia under deep ether shows a close similarity to those found in the condition produced experimentally. The asphyxia under deep ether seems to explain the sudden decrease in blood pressure and stoppage of the heart, although an active process may be involved. Under light surgical anesthesia respiration is seldom inhibited for a very long time.

In a few experiments stimulation of the superior laryngeal nerves under an ether tension, slightly too low for surgical work, has produced a partial inhibition of respiration for as long as four to eight minutes. This period of inhibition is longer than that which produced death in several of the experiments under deep ether. Under the very low ether tension, however, blood pressure remained practically normal and death did not occur.

These results would furnish some support to the idea that the sudden death following inhibition of respiration under a high ether tension was mainly owing to a failure of the organism to compensate for the asphyxiation when saturated with a high ether tension. Ligation of all the structures to the limbs of a dog except the major artery, will usually produce all the signs of shock. The relative amount of tissues involved by these ligatures was on an average approximately 15 per cent. of the total body weight. The experiments show that a circulatory impairment following venous obstruction of the return of blood from the four limbs of an etherized animal is sufficient to produce the signs of shock.

10. **Secretory Pressure of Liver.**—The secretory pressure of the liver was found to vary considerably in various species of animals. The reason for this is not clear; there may be many causes; however, the presence or absence of the gallbladder does not seem to be one of them. The secretary pressure of the liver appears to be somewhat greater in unanesthetized animals than in those under an anesthetic, but since the data obtained on anesthetized animals were only comparative, the conclusion that the presence or absence of the gallbladder bears no relation to the secretory pressure of the liver is justified.

Boston Medical and Surgical Journal

Nov. 14, 1918, **179**, No. 20

11 Modern Art and Mass Psychotherapy. S. E. Jelliffe.—p. 609.
12 *Shall We Never Learn?* D. M. Lewis.—p. 613.
13 Neuroses Among Returned Soldiers. Types and Indications. C. B. Farrar.—p. 615.

Colorado Medicine

November, 1918, **15**, No. 11

14 Work of Draft Boards. J. R. Barber.—p. 267.
15 Nation's Need of Doctors and Nurses for Army. H. G. Wetherill. —p. 271.
16 Insanity. Prevention and Treatment as a State Problem. G. A. Moleen.—p. 273.
17 Case of Hysterical Lameness with Convulsions Treated by Suggestion. C. S. Bluemel.—p. 280.

Indiana State Medical Association Journal

Nov. 15, 1918, **11**, No. 11

18 Educational Qualifications for Practice of Medicine. B. D. Myers. —p. 401.
19 Fistula in Ano. C. F. Fleming.—p. 404.

Journal of the Medical Society of New Jersey, Orange

November, 1918, **15**, No. 11

20 Pathology of Epidemic Influenza. A. R. Casilli.—p. 373.
21 After Dinner Addresses. J. F. Patterson, Orange.—p. 374.

Journal of Pharmacology and Experimental Therapeutics

October, 1918, **12**, No. 3

22 *Anthelmintics: Their Efficiency as Tested on Earthworms. T. Sollmann.—p. 129.
23 *Differences in Action of Drugs on Different Parts of Bowel. W. C. Alvarez.—p. 171.
24 *Liberation of Internal Secretion of Thyroid Into Blood. J. M. Rogoff.—p. 193.
25 *Preparation of a Soluble Concentrated Product of the Thyroid Gland. J. M. Rogoff.—p. 207.

22. **Efficiency of Anthelmintics.**—Sixty-nine drugs or combinations were tested by Sollmann as to their anthelmintic property. He found that the highest vermicidal efficiency is possessed by substitutes that are not clinically available for this purpose; namely, mercuric chlorid, cupric sulphate, and mustard oil. Sollmann suggests that by virtue of this effect, anthelmintics doubtless often "expel" the parasite when the concentration does not rise sufficiently high to kill the worm.

23. **Action of Drugs on Different Parts of Intestine.**—This study was undertaken by Alvarez with the hope that light might be thrown on the physiology as well as pharmacology of the intestine. Other work convinced him that there are marked differences in the neuromuscular apparatus in different parts of the tract. Five segments excised from different parts of the rabbit's intestine were studied under identical conditions in warm aerated Locke's solution. Seventy-six substances were tested. Physostigmin, glucose, mercuric chlorid, pilocarpin, potassium chlorid and sodium bicarbonate stimulated all parts about equally, whereas alum, bile, calcium chlorid, cocain and ether depressed all parts about equally. Some of these drugs stimulate in small doses and depress in large; some depress or stimulate after an initial stimulation or depression; others affect one segment one way and another segment the other way. A number of substances stimulated or depressed one end of the bowel more than the other, while a few stimulated one end and actually depressed the other. Among the drugs which might steepen

the gradient were epinephrin, aloin, cascara, magnesium sulphate, sodium citrate, sodium bicarbonate and sodium chlorid. Among drugs which might reverse the gradient were digitalis, ergot, ipecac, potassium iodid, sodium salicylate and morphin sulphate. The depressant effects of alum, carbon dioxid, cascara, senna and sodium nitrite were usually more marked in the colon than in any part of the small bowel. Mercuric chlorid generally stimulated the colon less than the small intestine. Sodium salicylate sometimes stimulated the colon more than it did the small intestine. Benzene usually stimulated the small intestine and depressed the colon. Similar effects were obtained with lead acetate and phenol. They were observed less constantly with chloroform, copper sulphate, sodium chlorid and sodium citrate. Morphin generally increased the amplitude of the colonic contractions while it sometimes depressed the activity of the small bowel. Picric acid, in several experiments, markedly stimulated the colon and at the same time, depressed the small bowel.

24. **Liberation of Internal Secretion of Thyroid Into Blood.**—The object of this investigation was to determine whether it is possible to detect, in the blood coming from the thyroid, a substance whose physiologic activity corresponds to that of the gland. Rogoff reports the results of a preliminary set of experiments with blood obtained from the thyroid glands of three dogs, in which the tadpole reaction was employed. One dog, whose thyroid glands were rich in colloid and had a good iodin content, yielded evidence of an active secretion into the blood collected from the glands during massage and during stimulation of the cervical sympathetic nerve. Two dogs whose thyroid glands were hyperplastic and contained no detectable iodin yielded negative results.

25. **Soluble Product of the Thyroid Gland.**—The product "A" obtained by alkaline hydrolysis of normal thyroids of hogs, according to Kendall's method (1), was subjected by Rogoff to further hydrolysis in water acidified with hydrochloric acid. When the substance was completely digested the resulting solution was filtered through a Chamberland filter. To the clear filtrate was added hydrated aluminum silicate (Lloyd's reagent) and the mixture thoroughly shaken and filtered through paper. The hydrated aluminum silicate on the filter was thoroughly washed with water until all of the acid was washed out. The absorbed product was separated by slowly percolating through the material on the filter a dilute solution of ammonia in water until the percolate came through entirely colorless. The ammoniacal solution was then heated on a water bath and the ammonia driven off with the aid of a current of air passed through the solution. The resulting aqueous solution was reddish brown and on evaporation yielded an amorphous powder. This powder contained 13.44 mg. of iodin per gram of dry substance and the product "A" from which it was obtained contained 16 mg. per gram. A small quantity of the product was available for feeding experiments with tadpoles. This product showed very nearly the same degree of activity as the product "A" from which it was obtained.

Kansas Medical Society Journal

November, 1918, **18**, No. 11

26 Clinical Value of Wassermann Reaction and Other Laboratory Tests in Diagnosis of Syphilis. H. M. Conner.—p. 263.
27 When and How to Remove Tonsils. T. L. Higginbotham.—p. 267.
28 Spiritual vs. Medical Advice. D. D. Wilson.—p. 269.

Kentucky Medical Journal, Bowling Green

November, 1918, **16**, No. 11

29 Nitrous Oxid in Labor. L. C. Redmon, Lexington.—p. 499.
30 Twilight Sleep. J. A. Orr, Paris.—p. 500.
31 Pituitrin; Its Uses and Abuses. E. Speidel, Louisville.—p. 503.
32 Rupture of Pregnant Uterus. H. L. Read, Louisville.—p. 505.
33 Prolapse of Uterus. H. A. Gilliam, Milburn.—p. 506.
34 Pelvic Infections. W. E. Fallis, Louisville.—p. 507.
35 Mixed Infection Pneumonia. A. W. Nickell, Louisville.—p. 511.
36 History of Smallpox. R. S. Plumlee, Smith's Grove.—p. 513.
37 Dichloramine-T in Treatment of Wounds. T. R. Griffin.—p. 514.
38 Treatment of Pneumonia. J. Glahn, Owensboro.—p. 515.
39 Treatment of Cardiac Diseases by Measures Other Than Drugs C. Pope, Louisville.—p. 519.
40 Infantile Paralysis. R. N. Filiatrean, Sorgho.—p. 528.
41 Tribute to Dr. Avington Simpson Cook. J. F. Young, Monticello.—p. 529.

Maine Medical Association Journal

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42 Compulsory School Physicians in Maine. J. A. Spalding.—p. 81.
43 Sporotrichosis. Report of Case. D. B. Cragin, T. E. Hardy and J. F. Shaw.—p. 93.

Medical Record

Nov. 16, 1918, **94**, No. 20

44 Tuberculosis: Diagnosis and Treatment with Roentgen Ray. A. R. McMichael.—p. 839.
45 *Cancer of Thyroid. D. C. Balfour.—p. 847.
46 Shall Women Study Medicine? A. S. Daniel.—p. 850.
47 *New Method of Percussion. A. Abrams.—p. 855.
48 Value of Salicylates in Treatment of Influenza. B. Robinson.—p. 856.

45. **Cancer of Thyroid.**—One hundred and three cases of cancer of the thyroid were seen in the Mayo Clinic, a percentage of 1.6 of 6,359 cases of goiter, exclusive of the exophthalmic group. The cancer incidence, based on 14,456 patients with goiters, is 1.19 per cent. Of the 103 patients, 81.5 per cent. were more than 40 years old. Sixty-eight (68 per cent.) of the patients were females, thirty-five (35 per cent.) were males. The most important lesson to be drawn from an analysis of these cases, Balfour says, is the fact that in 46 per cent. no clinical manifestations of the disease were in evidence. This group shows by far the highest percentage (about 70) of patients free from recurrence at the present time. In other words, the great majority of apparent cures have occurred in those cases in which the malignant change was an unexpected finding. Total thyroidectomy was rarely performed in this group. In most instances the lobe containing the tumor and the malignant process was removed, but in many the enucleation of an adenoma was the procedure. The analysis showed also that when clinical evidences of cancer are present the results of surgical treatment are discouraging. Total extirpation of the gland appears to be indicated only when both lobes are grossly involved in the disease, and when past experience warrants surgical interference in the particular case. Recognizable involvement of cervical glands usually means that the time for surgical cure is past. Occasionally, however, just as the unexpected occurs in the treatment of extensive cancer elsewhere, an apparent cure is obtained. Gross involvement of trachea or esophagus is almost a certain sign against curability. In this series the average number of years of abnormal growth in the thyroid preceding the operation was 11.6. This Balfour regards as being proof positive of the advisability of the early removal of well-developed thyroid nodules.

47. **New Method of Percussion.**—The method described by Abrams embodies the principle of transsonance and is executed by continuous or intermittent direct percussion (without the interposition of a pleximeter) with the finger at the acromial extremity of either clavicle. In very fat individuals a pleximeter may be used and the latter struck by aid of a plexor with a soft rubber end. In the execution of the method cognizance is taken of the following components which make up the maneuver: (1) dulness; (2) palpatory percussion; (3) auscultatory percussion.

Missouri State Medical Journal

November, 1918, **15**, No. 11

49 *Prostatic Enucleation. L. Rosenwald.—p. 385.
50 *Painful Feet. R. HcE. Shauffler.—p. 387.
51 Chronic Backache from an Orthopedic Standpoint. A. E. Horwitz.—p. 389.
52 Pernicious Anemia Treated by Multiple Transfusion and Splenectomy. E. Schisler.—p. 392.
53 Need of a Well Equipped Laboratory in Connection with the State Board of Health. W. A. Clark.—p. 395.
54 Some Neglected Fields in Medicine and Their Relation to General Practice. J. W. Bolton.—p. 399.
55 *Small Hospitals in Rural Districts, Their Benefit to the Laity and Physician. N. I. Stebbins.—p. 402.

49. Abstracted in The Journal, June 15, 1918, p. 1889.

50. Abstracted in The Journal, June 15, 1918, p. 1889.

55. Abstracted in The Journal, June 15, 1918, p. 1889.

New York Medical Journal

Nov. 16, 1918, **108**, No. 20

56 Operation for Senile Cataract. F. Allport.—p. 841.
57 Intravenous Injections of a Nonbacterial Split Protein in Treatment of Influenza. R. G. Snyder.—p. 843.
58 Treatment of Influenza Pneumonia. J. M. Taylor.—p. 847.
59 Need for Medical Supervision During Pregnancy. A. Routh. —p. 848.
60 Orificial Lues. W. P. Cunningham.—p. 851.
61 Ingrown Toenail and Coup D'Hache. D. H. Stewart.—p. 858.
62 Prophylaxis of Hay Fever. H. C. Lane.—p. 859.
63 Carrel-Dakin Treatment of Infected Wounds. W. Fuller.—p. 861.

Ohio State Medical Journal

Nov. 1, 1918, **14**, No. 11

64 Healing of the Tubercle. F. Warner.—p. 628.
65 Therapeutics of Influenza. E. W. Mitchell.—p. 634.
66 Some Phases of Influenza. C. H. Higgins.—p. 635.

Oklahoma State Medical Journal

November, 1918, **11**, No. 11

67 Obstetric Morbidity. W. A. Fowler.—p. 345.
68 Clinical Aspects of Endocarditis. M. P. Springer.—p. 354.
69 Complications That May Accompany Dentition. H. M. Williams. —p. 360.
70 Gonorrheal Infection of Uterus. J. S. Hartford.—p. 364.

United States Naval Medical Bulletin

July, 1918, **12**, No. 3

71 Plan and Description of Fleet Hospital Ship. E. M. Blackwell. —p. 347.
72 Normal Hearing. G. B. Trible.—p. 366.
73 Diagnosis and Surgical Judgment in Acute Abdominal Pain. P. J. Murphy.—p. 385.
74 McBurney Incision for Appendix. L. R. G. Crandon.—p. 393.
75 What Every Young Naval Surgeon Should Know. H. C. Curl. —p. 394.
76 Prevalence of Syphilis in Haiti. F. X. Koltes.—p. 396.
77 With Destroyers in War Zone. L. H. Williams.—p. 403.
78 Psychiatric Material in Naval Prison at Portsmouth, N. H. A. L. Jacoby.—p. 406.
79 Detection of Undesirable Candidates. A. W. Stearns.—p. 413.
80 Air Chambers for Navy Stretcher. J. A. B. Sinclair.—p. 441.
81 Preparation of Identification Tags. M. A. Stuart.—p. 442.
82 New Hospital Corps Pouch. W. E. Eaton.—p. 443.
83 Tabulation of Pneumonia Symptoms. R. W. Holbrook.—p. 447.
84 Acute Anaphylaxis. C. W. Carr.—p. 447.
85 Death from Arsphenamin (Salvarsan). F. B. McNierney.—p. 448.
86 Abscess of Mediastinum. A. G. Sund.—p. 449.
87 Spontaneous Pneumothorax. A. G. Sund.—p. 451.
88 Heart Block and Dropped Beats. N. H. Clark.—p. 452.
89 Streptococcal Empyema. A. E. Younie.—p. 453.
90 Bullet in Apex of Right Lung. F. J. Dever.—p. 455.
92 Chronic Malaria. W. C. Espach.—p. 457.
93 Case of Erythema Bullosum. F. W. Hartman.—p. 464.
94 Case of Erythema Nodosum. G. A. Gray.—p. 467.
95 Early Cerebral Syphilis. C. A. Ainslie.—p. 469.
96 Case of Diabetes Insipidus. E. E. Moody and C. F. Carter. —p. 471.
97 Case of Emphysema of Conjunctiva and Sclera. J. P. Israel. —p. 473.
98 Treatment of Cerebrospinal Fever. W. E. Golden.—p. 474.
99 Treatment of Fracture of Nasal Bones. E. A. Knorr.—p. 477.
100 Treatment of Fractures Mandible. D. J. Alexander.—p. 478.

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101 *Heart Murmurs in Recruits. J. F. B. Cordeiro.—p. 577.
102 Cardiac and Tubercular Disease. H. S. Anders.—p. 584.
103 *Athletics and Their Relation to War. D. F. Luby.—p. 592.
104 Memoranda for Medical Officers. A. Farenholt.—p. 601.
105 Endocrine Manifestations. S. G. Strass.—p. 609.
106 *Study of Dengue at St. Thomas, V. I. F. F. Lane.—p. 615.
107 Epididymotomy in Military Surgery. L. Herman.—p. 623.
108 Cerebrospinal Fever at Great Lakes, Ill. J. T. Short.—p. 627.
109 Diseases of Central Nervous System. D. R. Highbee.—p. 646.
110 Dislocation of Carpal Semilunar Bone. R. E. Hoyt.—p. 701.
111 Aneurysm and Rupture of Left Posterior Cerebral Artery. J. J. A. McMullin.—p. 702.
112 Case of Cavernous Hemangioma. C. W. Smith.—p. 704.
113 Case of Acute Bilateral Dacryoadenitis. J. V. Connole.—p. 706.
114 Paralysis of Musculospiral Nerve. J. C. Adams—p. 708.
115 Cutaneous Diphtheria of Foot. J. J. Keegan.—p. 709.
116 Large Calculus Removed from Common Duct. R. G. LeConte.—p. 710.
117 Circumcision in Presence of Chancroid. J. S. Van Winkle.—p. 712.
118 Persistence of the Thyroglossal Duct. B. D. Parish.—p. 713.
119 Rupture of Popliteal Aneurysm. F. J. Dever.—p. 715.
120 Pericardial Effusion. J. M. Perret.—p. 717.
121 Enlargement of Salivary Glands. R. S. Boles.—p. 719.
122 Dendritic Calculi in the Kidney. G. G. Ross.—p. 720.
123 Foreign Body in Bronchus. E. W. Gould.—p. 721.
124 Case of Multiple Sebaceous Cysts. G. A. Gray.—p. 722.
125 Case of Undulant Fever. J. C. Parham.—p. 723.

101. **Heart Murmurs in Recruits.**—When examining some thousands of applicants for the Naval Reserve, Cordeiro found that pulmonary murmurs far outnumbered all other forms of murmurs—perhaps ten to one. The majority of the pulmonic murmurs were found chiefly among runners, though they occur in all forms of athletics where there is a steady prolonged grind. The strain of a race is thrown almost wholly on the right heart. The left heart participates to a much less degree. The call is for blood and air in the lungs and the right heart endeavors to supply a double amount of the former. The pain in the side is a symptom of this abnormal effort. The pathologic history of these cases seems to be as follows: At first, after each abnormal dilation, the heart contracts to its normal size, or nearly so. But a physiologic hypertrophy accompanies these efforts and the pulmonary orifice, instead of contracting to its former dimensions, eventually overcontracts and becomes slightly narrowed. This may be furthered by the development of new muscular tissue about the orifice. These murmurs, while occurring chiefly among runners, were also found in footballers, basket-ball players, boxers, wrestlers and among rowing men. Baseball players seemed to be least affected. Many college boys, undeveloped and imperfectly developing, without proper food at home, and often without a midday meal, practice assiduously every afternon on a field. While their anemic systems are struggling with the burden of the rapid growth after puberty, they subject their hearts to the added strain of the track.

Another class of cases of pulmonary direct murmurs, which, while indistinguishable clinically from athletic murmurs, have been found less often, and present a picture of their own. These cases can be attributed to an incoordinated development of the great vessels relatively to other parts of the body. Cordeiro has called them tentatively, hypoplastic murmurs. They occur only among the poorer classes and seem to be clearly the result of insufficient nutrition. There is usually a weedy growth in which the nutrition seems to be expended wholly in increasing the length of the body while the other parts remain stationary—notably the great vessels. The rule in such cases is that the subjects are very much under weight for their height—20 to 40 pounds underweight. Their complexions and skins are pasty and pimply, in marked contract to the clear skin of health, in which specimens there are never heart murmurs.

As a result of his investigation, Cordeiro is convinced that athletes, professional and amateur, are of distinctly less value from a military point of view than the average normal man. He suggests that one of the reforms springing out of this war will be—not the abolition of athletics, but a revision of the present athletic system. Physical exercise from a recreational and hygienic point of view is necessary, but beyond that point is a waste of time and may be injurious. Track athletics among boys he regards as criminal, and among their elders is of no value to the participants or the community, but on the contrary tends to spoil what would otherwise have been good military material.

103. **Athletics and Their Relation to War.**—Luby draws attention to the fallacies of our athletic system as developed up to the present time. He points out the uselessness of the object sought, and asserts that there was no gain but rather serious loss to those who participated in athletics in the past. He pleads for a radical change in methods and objectives in the athletics of the preparatory school, the college, and the university. He says that one of the most serious faults of our present athletic system, a vicious, pernicious system, if ever there was one, is the necessity for haste. Trainers work feverishly and anxiously to develop a winning team. They must develop such a team at all costs because failure means the loss of a job. Medical men and, to a certain extent, military men recognize that there is something wrong with athletics as now conducted in America. If boys are allowed to follow the pernicious course which begins in the grammar school or preparatory school and ends only with the university, they must pay the price, as their predecessors have done. To neglect the most careful athletic development of boys is to sap the very roots of strength and vitality in the future material of the Army and Navy.

While it is generally admitted that military training has considerable incidental advantages from the point of view of health, it would seem that the first thing to be considered is the universal physical training of boys. The plan proposed by Luby is as follows: All branches of athletics must be reclassified on the basis of their effects on the heart and other vital organs, and not on the basis of popularity and commercial advantage. In the grammar school the form of athletics to which a boy could be assigned or in which he would be permitted to engage in would depend on (1) his family history; (2) his personal history, having regard especially to previous illnesses endured; (3) his physical status; (4) his particular type, height, weight, etc., in relation to age, etc. Every class should have its specially prescribed athletics, both physical and tactical, and under no circumstances should a lad be allowed to engage in competitive sports assigned to a class above or below his own. A physical examination would mark his entry and exit from a class and he would be marked for development of body and for ability to perform the various tactics. While in the grammar school a chart would be begun for him which would accompany him throughout his educational career.

As the boy passes on to the higher school there should be a reconsideration of his individual record and his family history. A physical examination should be made and his chart and previous athletic work considered. There should be athletic classes and all members of a school or college should participate, except when exempted for physical disability. Outside competitions with other schools would be reduced and the competitive idea find its illustration principally in interclass games. Work in the gymnasium should accompany and parallel the work done in teams and athletic games. Where students show beyond all reasonable doubt a real and permanent improvement in body and an increased ability to participate in various branches of sport they should receive credits at the hands of the college authorities in the same way that credits are given for scholarship.

All athletics of the more strenuous type and all those contests which inevitably induce even temporary exhaustion must be abolished. Mass competition, such as that in which a class would participate as a whole, is to be encouraged. New feats of prowess should be introduced. There should be walking contests, wall-scaling contests, obstacle raising, hurdling, shorter relay events with increased personnel, more soccer football, shot putting with a lighter shot, etc. The athletics of today must be remolded and their object clearly defined. Athletics can have no better purpose than to develop a robust and healthy boy who, though he may not be an interscholastic champion or sought after by the larger colleges as likely to increase their fame, will nevertheless enter on his life work with a symmetrical, fully developed body, capable of resisting disease and of enduring physical strain. For such a young man the training camp, the transport, and the trench will not contain the threat of death from disease before his grapple with the enemy.

Reports from General Pershing's Army showed that the highest mortality from communicable disease was in the National Army and the lowest on the Regular Army. Luby believes that the variation in susceptibility can be ascribed directly to the variation in the time of preparation and development which these different units have enjoyed, the development of the National Army having been characterized by intensive training and high speed. He believes further that the accumulation of fatigue substances from overtraining for lengthy periods without proper attention to the time element brought about a condition analogous to that seen in the stale athlete, and it is not to be wondered at that the overtrained soldier should be particularly liable to pneumonia, scarlet fever, influenza, etc. Luby's study of soldiers on transports confirmed this belief.—The men were trained "too fine!"

106. **Dengue at St. Thomas, V. I.**—Lane has made a careful analysis of cases seen during an epidemic of dengue which suddenly made its appearance among the Americans who had been on St. Thomas Island three to eight months. These cases presented some peculiar features. The immediate source of the infection was unknown. The important feature, however, was the agent carrying the infection. The *Stegomyia calopus* is practically the only mosquito seen and inhabitating the localities where the disease was most prevalent, and the only place where the mosquito bite seemed to do any damage. The mild character of the bone pains was characteristic. Involvement of the lymph glands, in many cases, was quite severe. No breaking down or suppuration subsequently has been noted. Not one set of glands but all the large superficial glands throughout the body were involved. Epistaxis, although it occurred in only 10 per cent. of the cases, was very severe and difficult to control. Pain on forced motion of the eyeballs was the principal cause of the symptoms described by the patient as "headache" or "pain in the eyes." The pain was only elicited on extreme motion. Hyperesthesia, of a most intense variety, was noted when the shoulder was unconsciously touched by the examiner. Vasomotor phenomena occurred from the sixth to the eighth day, causing a cyanosis and coldness of the arms, hands, lower legs, and feet in about 17 per cent. of cases. The disappearance of the eruption was followed in about twenty-four hours by a quite severe and long-continued desquamation, accompanied by intense itching at times, a sensation as of swelling of the hands and feet, and a continual and profuse sweating of these parts. Blood examination did not show on the average the very low leukocyte count and the discrepancy in the differential count usually acredited to dengue, yet these findings were sufficiently marked in a number of cases to accord perfectly with other descriptions. These blood findings depended largely on the severity of the attack.

A very disturbing feature in the convalescence, from the patient's standpoint, was the inability to relish food due to the bad metallic taste that everything had, although the appetite was quite keen. All the ordinary work could be performed without any difficulty, but the least extra strain, such as fast walking or going up hill, brought on an intense weakness and fatigue which had not been present before the fever and which it took some days and, in many cases, weeks to overcome. In most cases immunity seems to hold after one attack, but about 5 to 8 per cent. of the patients had a recurrence three weeks to several years after the original attack.

The epidemic gradually faded out. With the decrease in rainfall it had almost disappeared. Only an occasional individual who had just arrived would become infected. During the dry season when mosquitoes were very few, dengue was practically absent. The control of the mosquitoes and their breeding places has improved conditions to a slight degree, but the inability to obtain screening for the town, the lack of a properly trained corps of sanitary inspectors, and the difficulty in educating the people (natives) do not give much hope of freedom from dengue in the near future.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal

Oct. 26, 1918, 2, No. 3017

1 Doctrine of Consumption in Harvey's Time and To-day. P. Kidd.—p. 455.
2 *Advantages of Intramuscular Injections of Soluble Cinchonin Salts in Severe Malarial Infections. L. Rogers.—p. 459.
3 Epidemic Encephalitis. Analysis of Sixteen Cases. A. J. Hall.—p. 461.
4 *Quinin Prophylaxis in Malaria. G. W. Scott.—p. 463.
5 *Unreliability of Sulphur for Destruction of Lice in Clothing. A. Bacot.—p. 464.

2. **Injection of Soluble Cinchonin Salts in Malaria.**—Experiments were made by Rogers to ascertain the rapidity and completeness of the absorption from muscle of quinin and cinchonin bihydrochlorid, respectively. In animals killed twelve hours after injection, 88 mg. of absorbed alkaloid were recovered from the organs in the case of the cinchonin sal., as compared with only 30 mg. in the quinin animal, showing approximately three times as great absorption in the practically important first twelve hours. On the other hand, 80 mg. of the precipitated quinin was recovered from

the muscle after twelve hours, as against 40 mg. of precipitated alkaloid in the cinchonin animal. At the end of twenty-four hours 65 mg. were recovered locally from the quinin animal against only 30 mg. from the cinchonin one, while 65 mg. were recovered from the organs of the cinchonin animal (where the alkaloid would come into contact with the malarial parasites) against 26 mg. in the quinin one. At the end of seventy-two hours the organs only showed 2 and 8 mg., respectively, showing that absorption must have now nearly ceased, and most of the drug, had already been eliminated from the body, presumably through the kidneys. The injected muscle now showed no less than 28 mg. of precipitated quinin still remaining in it, against only 10 mg. of alkaloid in the cinchonin animal, thus indicating that the absorption of the cinchonin salt was much more complete at the end of three days than of the quinin one. This fact, taken with the three times as rapid absorption during the first twelve hours of the cinchonin bihydrochlorid, indicates that the latter is far superior to quinin bihydrochlorid when given by the intramuscular route with a view to rapid absorption and action in a severe malarial infection.

The clinical effect on the animals was even more striking, for whereas the animals injected with the quinin salts appeared to suffer from no definite symptoms of poisoning, the cinchonin animals, on the other hand, became violently convulsed within half an hour of the injection, indicating very rapid absorption of the drug, a relatively very large dose having purposely been given.

In the treatment of human cases, the acid hydrobromid has been mainly used for intravenous and the bihydrochlorid for intramuscular and subcutaneous injections. By each method of injecting the cinchonin salts, rapid disappearance of both the fever and of the parasites from the peripheral blood was obtained in all three varieties of malaria. In the benign tertian and quartan cases the parasites always disappeared in one or two days, and in all but one the fever ceased within the same time, and in the remaining one within three days. In the malignant tertian variety the parasites generally disappeared within two days and always within three, and the fever ceased within the same period of time. The immediate results of the injection of the cinchonin salts were thus very satisfactory, and compare favorably, especially as regards the more serious malignant tertian variety, with those of adminsitering quinin by various methods in the army in England. In severe cases of malaria and during the prevalence of pernicious cases, as well as in patients who vomit orally administered quinin, Rogers suggests the further trial of intramuscular injections of 7.5, 10, and in adult males up to 15 grains of cinchonin bihydrochlorid (or in less severe cases, if preferred, the cinchonin acid hydrobromid, which produces less cinchonism) during the first few days of an attack of malaria, to be followed by a full course of quinin orally to prevent relapses.

4. **Quinin Prophylaxis in Malaria.**—The members of one group of rubber workers, the tappers, were given 10 grains of quinin each day for one year, and during that period no prophylactic quinin was issued to a second class of workers, the weeders, in order to determine the value of quinin prophylaxis against malaria. The result was entirely negative. The treatment gave no protection whatsoever against malaria.

5. **Sulphur as a Lice Destroyer.**—The trials forming the basis of this note were undertaken with a view to testing the efficiency of a process of fumigation as applied in the London Borough casual wards. The results of these experiments were entirely unsatisfactory, hence Bacot suggests reliance on heat, wherever possible, for the destruction of insect vermin, half an hour's exposure to a temperature of 55 C. being amply sufficient with either dry or moist heat, provided the clothing or other articles are suspended, and not bundled.

Dublin Journal of Medical Science

September, 1918, **146**, No. 561

6 *Clinical Report of the Rotunda Hospital for 1916 and 1917. W. Smyly, R. Purefoy and E. H. Tweedy.—p. 101.
7 Leechcraft in Afghanistan. I. Ali Shah.—p. 122.
8 Medical Diseases of the War. A. F. Hurst.—p. 129.
9 Practical Organic and Biochemistry. R. H. A. Plimmeer.—p. 130.
10 Dublin University Calendar for Year 1918-1919. Hodges, Figgis & Co.—p. 131.
11 Field Sanitation. C. G. Moor.—p. 132.
12 War Surgery of the Abdomen. C. Wallace.—p. 133.
13 Conduction of Nervous Impulse. K. Lucas.—p. 134.
14 Internal Secretions. E. Gley.—p. 136.

6. **Clinical Report of Rotunda Hospital.**—A total of 3,090 labors were attended by the hospital staff during the year. There were seven deaths. Two were due to hemorrhage, one to rupture of the uterus, one to eclampsia, one to cerebral hemorrhage, one to advanced pulmonary phthisis, and one patient was hopelessly septic when admitted. Among the complications were five cases of rupture of the uterus. A sixth case was sent into the hospital after the accident had occurred. Of the six patients, one mother died. Of nine cases of eclampsia, only one proved fatal, a mortality of 11 per cent. Besides these cases of eclampsia there were twelve of toxemia, the so-called pre-eclamptic state: all the patients recovered. Five labors were complicated bu uterine myoma, in three of which there was serious trouble including one death from hemorrhage. There was one case of mania. Forceps were applied 70 times. Version was performed ten times—three external, four bipolar, and three internal. External manipulation was twice employed to convert the breech into a vertex presentation. Bumm's subcutaneous pubiotomy was performed on two occasions, with satisfactory results as regards the mothers, but one child was stillborn, and the other died on the sixth day. Premature labor was induced five times, three times for toxemia, once for pelvic deformity, and once for mitral stenosis. Cesarean section was performed fifteen times, namely, in nine cases of pelvic deformity, in three of rupture of the uterus, twice for myoma, and once for anus vaginalis. The placenta was removed manually twenty-two times. Five cases of melena in infants were treated with horse serum, with one death.

Indian Journal of Medical Research

July, 1918, **6**, No. 1

15 Detection of Hookworm Infection. C. Lane.—p. 1.
16 Examination of Relationships by Statistical Methods. G. T. Walker.—p. 26.
17 *Food Value of Groundnut (Peanut). R. L. M. Wallis.—p. 46.
18 Antiberiberi Vitamin Content of Three Kinds of Atta Biscuits. E. D. W. Greig and D. F. Curjeil.—p. 56.
19 Latent Dysentery. J. Cunningham.—p. 68.
20 Laboratory Study of a Diphtheria Outbreak. R. Knowles.—p. 102.
21 *Use of Strychnin in Diagnosis of Malaria. H. H. King.—p. 116.
22 Romanowsky Staining. H. E. Shortt.—p. 124.

17. **Food Value of Groundnut.**—Wallis regards the groundnut or peanut as an especially valuable source of protein. It would seem that in India, where this legume grows in abundance, Nature had provided a cheap and efficient source of nitrogenous material to supplement the diet of the natives, which is rich in carbohydrates and poor in protein. The adoption of groundnut cake as a food is urged both on scientific and economic grounds. Wheat, oats, and several other cereals are markedly deficient in the so-called basic amino-acids, and groundnut cake contains the largest amount of these building stones of any known cake. To be palatable, easily digested and free from any objectionable taste, it requires to be properly prepared. The groundnuts as obtained after decortication must be washed free from grit, dirt, stones, etc., and have the red skin coating the kernels removed. The clean, white kernels are now subjected to hydraulic pressure to remove the arachis oil. After this expression, which should always be carried out in the cold, the groundnut cake still contains too much oil—between 9 and 10 per cent., or even as much as 15 per cent. Such a cake when ground up will yield a flour with a taste of the groundnut, which is slightly bitter. Further, it contains too much oil to be really serviceable for the making of bread or biscuits.

A large number of experiments were carried out by Wallis with such a cake, but it was found that the bread made from it was always too heavy. By warming the cake and then subjecting it again to hydraulic pressure, some of this oil is removed. The cake is now ground up, and yields an excellent flour, which possesses a slightly sweet taste, and is far superior in every way to the cake containing 10 per cent. or more of oil. The small amount of oil remaining, usually about 5 per cent., is, on the whole, beneficial, since it tends to preserve the flour, increase its nutritive properties, and makes a light and easily preserved biscuit. All objections to the groundnut as an article of food are thus removed, since the oil is the constituent responsible for any undesirable effects. Wallis suggests that in view of the shortage of the world's food supplies, both now and after the termination of the war, it would appear advisable to consider the utility of developing this industry with a view to the preparation of peanut flour on a large scale.

21. **Strychnin in Diagnosis of Malaria.**—Di Paca says that repeated doses of strychnin or berberin are useful in the diagnosis of malaria by increasing the number of parasites in the peripheral circulation. The dose of strychnin advocated is from 2 to 4 mg. by the mouth, or 2 or 3 mg. hypodermically every hour for four hours. The blood is then to be taken from the lobe of an ear at the end of the fourth hour. If it be true that strychnin has this effect, the observation is an important one, since it would materially aid the study of malaria and of malarial relapse. King tested this use of strychnin by comparing with each other blood slides taken before and after its administration. He found that strychnin in large doses (20 or 30 minims of liquor strychninae hydrochloridi, B. P., in five hours) will in half of the cases definitely contract a large spleen, but have no appreciable action on small spleens. In most cases it will not increase the number of parasites in the peripheral circulation. Hence, as a routine aid to diagnosis, strychnin has no place. King suggests that the blood pressure raising group of drugs, such as strychnin, be tried in the treatment of malaria in the early as well as in the late stages as an adjuvant to quinin.

Indian Medical Gazette

September, 1918, **53**, No. 9

23 *Unclassified Form of Long Continued Pyrexia in Mesopotamia. C. A. Sprawson and F. P. Mackie.—p. 321.
24 Principles of Military Orthopedics. Constitution of Orthopedic Hospital. A. W. Sheen.—p. 328.
25 Cases Treated with Radium. J. C. Vaughan.—p. 333.
26 *Mirror of Hospital Practice.* C. A. F. Hingston.—p. 336.
27 Case of Primary Abscess of Spleen. J. Winterbotham.—p. 340.

23. **Long Continued Fever of Mesopotamia.**—The diseases to which the condition described has most resemblance are kala-azar, pulmonary tuberculosis, and malaria, either singly or a combination of kala-azar or malaria with tuberculosis. The condition has special resemblance to kala-azar, especially in its long continued pyrexia and in the leukopenia present and in the pigmentation. No Leishman-Donovan parasite, however, has been recovered from spleen or liver puncture either before or after death. Quinin, arsphenamin, antimony tartrate intravenously, and arsenic by the mouth seem to exert no influence on the course of the pyrexia. Moderate doses of potassium iodid have hitherto given most satisfaction. It is suggested that the disease will prove to be due to infection with a streptothrix-like parasite and therefore may be described as a "disseminated nocardiasis." The disease exhibits bronchitic, pulmonary or pleuritic signs at some period of its course. It may be fatal or spontaneous recovery may occur.

Archives des Maladies du Cœur, etc., Paris

September, 1918, **11**, No. 9

28 Sinusal Bradycardia with Paradoxic Response to Atropin. A. Cramer.—p. 385.
29 Deceptive Case of Mitral Stenosis. Laubry and Esmein.—p. 389.
30 Extrinsic Causes of Shock in the Wounded. C. Vincent.—p. 394.

Bulletin de l'Académie de Médecine, Paris

Oct. 8, 1918, **80**, No. 40

31 *The Blood and the Urine in Influenza. G. Patein.—p. 304.
32 *Uremia After War Wounds. H. Reynès.—p. 308.
33 *Spirochetes in Influenza Sputum. De Verbizier.—p. 310.

31. **The Blood and Urine in Influenza.**—Patein comments on the surprisingly high urea content of the urine in his influenza cases.

32. **Uremia After War Wounds.**—Reynès found from 30 to 45 gm. of urea per liter in twenty-four hours in 30 cases of war wounds. About 210 analyses were made and they showed the gradual rise of the urea content of urine and blood, paralleling the gravity of the symptoms. The urea comes from the absorbed products of the disintegration of devitalized tissues, and by watching over the urea content of the urine it is possible to ward off serious uremia by giving hot sweetened drinks in abundance, with other means to stimulate diuresis. No nitrogenous food should be allowed, no milk, but saline purges should be given repeatedly. Other measures to combat uremia include warmth, rubbings, venesection, lumbar puncture, intravenous injections of sugar solutions, and thorough clearing out of all devitalized tissue, with ample drainage. In conclusion he reiterates that the "uroprognosis from the daily urea curve" is extremely important.

33. **Spirochetes in Influenza Sputum.**—Verbizier has found two varieties of spirochetes along with pneumococci, streptococci and probable Pfeiffer bacilli in the sputum of his influenza patients.

Bulletins de la Société Médicale des Hôpitaux, Paris

July 12, 1918, **42**, No. 25

34 *Walking Test of Heart. Joltrain and Baufle.—p. 745.
35 Production of Eosinophils and Basophils in Joints and Tissues. Petzetakis.—p. 749.
36 Epidemic Influenza. A. Florand.—p. 753.
37 Hypertension of Cerebrospinal Fluid After Ligation of Internal Jugular Vein. G. Guillain.—p. 757.
38 Claude Bernard-Horner Syndrome in Aviator After Fall. G. Guillain.—p. 761.
39 Purely Meningeal Form of Ictero-Hemorrhagic Spirochetosis. S. Costa and J. Troisier.—p. 762.
40 Tetragenus Sepsis Complications. Perfetti and Monziols.—p. 768.

34. **Walking Test of Functional Capacity of the Heart.**—Joltrain and Baufle comment on the instructive findings with the test of the heart which they apply. One hour after lunch the group being examined are sent for a walk over a certain course, from 2 to 15 miles long, under the surveillance of an experienced person. The walk is at a uniform pace, without resting, and the pulse is recorded before and after, and again as the individual reclines, perfectly still, the second, fourth, fifteenth, twentieth, thirtieth, forty-fifth and sixtieth minutes. No matter what the exertion, the tachycardia in a normal subject has always disappeared by the sixtieth minute.

Lyon Chirurgical, Lyons

May-June, 1918, **15**, No. 3

41 *Liver Abscesses in Macedonia. G. Cotte and Chifoliau.—p. 273.
42 *Sequelae of War Wounds of Chest. Pèhu and Daguet.—p. 291.
43 *Complications of War Wounds of Lung. Combier and Hertz.—p. 311.
44 *Pleurectomy for Wounds of the Chest. Roux-Berger.—p. 330.
45 *Extraction of Projectile in Lung. R. Olivier.—p. 339.
46 Projectile in Anterior Wall of Heart Ventricle. B. Desplas and D. Chevalier.—p. 353.
47 *Gastroduodenal Ulcer and Appendicitis. M. Dubard.—p. 356.
48 Laws of Healing of Superficial Wounds. R. Ingebrigtsen.—p. 363.

41. **Liver Abscesses in Macedonian Campaign.**—Among the fifteen operative cases, the abscess had already perforated in three cases, and in all the diagnosis had been made tardily, but seven of the men recovered. The symptoms from the abscess had been masked by malaria or dysentery. The cases teach the importance of systematic exploration of the liver in search of suppuration when the liver is found enlarged in a person with or who has had dysentery. The outlook for operative relief is infinitely better when it comes early, and radioscopy and puncture usually permit an early diagnosis. In one case it proved possible to clean out the pus pocket and suture it, with filiform drainage and healing by primary intention.

42. **War Wounds of Chest.**—Péhu and Daguet found three cases of unmistakable pulmonary tuberculosis among 146 men with war wounds of the chest reexamined from four months to three years afterwards. In two others there was

pleurisy of tuberculous origin. They were impressed by the frequent complete return to normal after extravasation of blood or a suppurative process. With tuberculous pleurisy, on the other hand, there is liable to be involvement of the diaphragm, etc., leading to irreparable lesions.

43. **Septic Local Complications of Wounds of Chest.**—The experiences in fifteen cases which are reported in detail show that it is possible to ward off chronic purulent pleurisy by clearing out the septic effusion in the pleura, rendering the pocket sterile by Carrel's technic for irrigation and drainage, and then suturing at the earliest possible moment. The war experiences have demonstrated the harmlessness of incision of the pleura, without fear of pneumothorax. Exercises to expand the lung are an important factor in the cure, especially exercising with the spirometer.

44. **Pleurectomy for War Wounds.**—Roux-Berger describes four cases of total pleurectomy, shelling off the stiff and thickened pleura, and fastening the lung to the chest wall to ensure its expansion. Three of the four men were completely cured; the fourth still has a small fistula left.

45. **Tardy Extraction of Projectile in the Lung.**—The projectile had been causing trouble in only two of the fifteen cases reported. The transpleural operation with artificial pneumothorax seems to be the preferable technic. The powerful retractors now used allow the ribs to be spread apart to give ample room for exploring the lung. The lung is easily brought outside the wound, the foreign body removed, and the airtight suture made.

47. **Gastroduodenal Ulcer and Chronic Appendicitis, Etc.**—Dubard found chronic appendicitis unmistakable in over 33 per cent. of 145 cases of gastro-enterostomy for ulcer. In private practice, this percentage is even higher. The frequency of such associated lesions of the gastro-intestinal tract explains the failure to cure of operations on one of the lesions, leaving the others still in a position to cause disturbance. They teach the necessity for careful exploration of the entire digestive tract. In 33 per cent. of his thirty-six laparotomies for ulcers and pyloric stenosis, the appendix was found diseased, as also in 45 per cent. of forty operative duodenal ulcer cases. He states further that 80 per cent. of his gastric ulcer cases presented evidences of pulmonary tuberculosis at the time, florid, torpid or healed. In nearly or quite all of them, pressure on the pneumogastric nerve in the neck on one or both sides was painful. He calls this the "sign of the pneumogastric," and explains it as a neuritis of this nerve, of pulmonary origin, and possibly reflected along the entire gastro-intestinal distribution of these nerves. This affords a predisposition to trophic disturbance, liable to elicit ulceration and certain other chronic inflammatory processes in the digestive tract.

Paris Médical

Sept. 7, 1918, **8**, No. 36

49 *Ophthalmology in 1918. F. Terrien.—p. 181.
50 Examination of Superior Conjunctiva. A. Terson.—p. 186.
51 *Otorhinolaryngology in 1918. L. Dufourmentel.—p. 190.
52 *Reconstruction after War Wound of Nose. Guisez.—p. 198.
53 Syphilis of the Pharynx. Bellin and Vernet.—p. 205.
54 Phlegmon Causing Jackson's Syndrome. H. Aloin.—p. 209.

49. **Ophthalmology in 1918.**—Terrien advocates the use of a mask to protect the eyes against scraps of shells, and has devised what seems to be a good model. He endorses Duverger's advice to retain the eyeball when the anterior portion only has been injured. In 150 penetrating wounds of the eye he succeeded in doing this in twenty-four cases, resecting down to sound tissue. He reviews among other works on ophthalmology published recently, Aubineau and LeNoble's study of nystagmus independent of eye and ear conditions; it must be classed with myoclonia. Also Weekers and Ferket's research on the multiple and diverse ocular disturbances liable to be encountered with icterohemorrhagic spirochetosis, including iritis, optic neuritis and herpes of the cornea. Every wound of the eye, it is emphasized, should be injected with a 1 per thousand solution of mercury cyanid, whether there is a foreign body present or not. This combats effectually the early infection in wounds of the eyes. If this had been done systematically in all the advanced stations, it is possible that the eyes might have been saved, in certain cases.

51. **Otorhinolaryngology in 1918.**—In Dufourmentel's review, he calls attention to Fay's statement that the disability from deafness does not depend on the acuity of the hearing but on the distance at which sounds are heard. Ability to hear the human voice is the gage of social impairment from deafness. The prognosis of deafness from shell commotion has proved favorable. The only treatment for war deafness that has proved effectual is by vocal reeducation and lip reading. Lombard's research on the sense of balance has established certain physiologic laws for antagonist movements with equilibration which have raised a number of new problems. A good illustration of some of these laws is afforded by the use of the balancing staff by the tight-rope walker. The physiologic laws he has determined impose certain attitudes for certain movements, and some of these attitudes have been perpetuated empirically in classic art. Among the recent progress in rhinology that has been realized is the appreciation of the pronounced tendency to spontaneous healing of war wounds of nasal sinuses. The mistake made at first was to regard and treat them like a sinusitis. Luc warns that a pointed trocar is liable to perforate the posterior wall of the maxillary sinus; a blunt instrument is better.

52. **Reconstruction of Nose.**—Seventeen illustrations show a number of devices to correct among other mutilations the loss of the tip of the nose. A triangle of bone and cartilage is cut extending sideways back of the nose, the straight side parallel with the upper jaw. This triangle is then swung around to bring the lateral tip on top. The flap then provides a normal outline for the nose.

Presse Médicale, Paris

Oct. 7, 1918, **26**, No. 56

55 *Antagonistic Action of Epinephrin and Pituitary Extract on the Bronchi. B. A. Houssay (Buenos Aires).—p. 513.
56 Cases of Direct Commotion of Spinal Cord. H. Claude and J. Lhermitte.—p. 514.
57 *To Line Bone Cavity with Skin. D. Thévenard.—p. 515.
58 Natural Iodized Waters. G. Billard.—p. 518.
59 Falling of the Hair from Irritation Caused by Wax in Ear; Two Cases. J. Deroide.—p. 520.

Oct. 10, 1918, **26**, No. 57

60 *The Influenza Pandemic. H. Violle.—p. 525.
61 Treatment of Influenza. G. Lyon.—p. 527.
62 *Present Status of War Surgery. G. Manoury.—p. 528.

55. **Antagonistic Action of Epinephrin and Pituitary Extract.**—Practically this same article was briefly summarized on page 1178, Oct. 5, 1918.

57. **Lining the Osteomyelitic Focus with Skin.**—Thévenard reports excellent results in the prompt healing of old and extensive inflammatory processes in bones by clearing out all devitalized tissue and lining with skin the deep groove left. The procedure is illustrated. The skin and subcutaneous tissue are incised to form square flaps each side of the bone focus. The bone lesion is cut to leave the focus as near a right angle as possible. A hole is bored through the soft parts and bone on one side to a point just above the inner angle of the gap in the bone, and a thread is drawn through. Then the loosened skin flap is drawn down into the gap to the lowest point, and is held there by tying the thread over a roll of gauze. The procedure is repeated on the other side, and the defect in the bone is thus lined smoothly with skin. The two flaps are fitted together where they meet at the inner angle, and may be held with a stitch. The threads are drawn only tight enough to hold the sets of gauze rolls in place.

60. **Influenza.**—Violle pleads for special hospitals for influenza patients, saying "Cases of fatal contagion of other patients already in the hospitals and left in contact with the influenza newcomers are already beyond counting, they are so numerous." It is equally important, he reiterates, to isolate, bacteriologically, influenza patients from each other. He advocates masks for all the healthy in contact with influenza patients, citing the favorable experiences with

masks in Manchuria during the epidemic of *pneumonic* plague.

He compares influenza with hog cholera as *instances of* infection by some one virus which opens the portal to another virus. In hog cholera, the invisible bacterium that unleashes the disease opens the portal to the paratyphoid bacillus. Without the latter there is no hog cholera, and yet we know that it is unable, alone, to induce hog cholera. Its presence is important both from the standpoint of *prophylaxis and treatment*, as the destruction of the paratyphoid bacilli seems to check the development of the still *unknown primal bacterium* of hog cholera. In influenza, the invisible virus causes such *extreme prostration* and has such toxic action that the ordinary microbes already present in the air passages or digestive tract rush into the gaps in the defenses. Nicolle calls these secondary invaders *microbes de sortie*. *Probably* even the *Pfeiffer* bacillus belongs in this group. All *varieties* and degrees of lesions may result, such as are possible when a *virulent, toxin-producing* and pyogenic microbe steps into a soil prepared in advance with ideal conditions for its rapid proliferation. One writer has said, "The reason why influenza kills, is because it strikes at the thorax." Meunier adds, *La grippe condamne et la surinfection éxécute.* The true microbe of influenza may have already disappeared by the time this superposed infection strikes home.

Violle reasoned that if the superposed infection could be warded off, influenza would lose its danger. In his region, the pneumococcus seemed to be mainly responsible for it, and he treated his influenza patients systematically with antipneumococcus serum in the same way as antitetanus serum is given the wounded. Each patient was injected in each thigh with 20 c.c. of antipneumococcus serum four hours after a preliminary injection of 1 c.c. of the same serum, and 4 gm. of calcium chlorid were given by the mouth. A hot compress was laid over the site of the injection. He says, "The results obtained were remarkable; it may even be advanced that pulmonary complications are averted by this means. But it is effectual of course only when the pneumococcus is the causal agent of the pulmonary complications. In regions where the streptococcus is involved, an antiserum for this would have to be used, or both. It seems as if the streptococcus was responsible more for the pleural complications, and the pneumococcus for the pulmonary." He also tried convalescents' serum but, as at least 100 c.c. are required for each patient, he turned to autoserotherapy, and this has given conclusive results, he says, in several cases. He drew the blood from a vein in the arm and reinjected at once the 20 c.c. under *the skin of the outer front of the thigh*. He adds that this can be repeated day after day without any inconveniences.

62. **Present Status of War Surgery.**—This is the presidential address delivered by Manoury at the French Surgical Congress which convened at Paris, October 7. He emphasized the abyss that separates the *surgery of the day* from that which prevailed at the time of the last congress of the kind, five years ago. (See recent Paris Letters.)

Progrès Médical, Paris

Sept. 7, 1918, **33**, No. 36

63 *Hexamethylenamin in Tuberculosis. Loeper and Wagner.—p. 305.
64 Necessity for Early Nephrectomy with Renal Tuberculosis. R. Uteau and M. Piollenc.—p. 305.
65 Gangrenous Phlegmon of Back of Hand. E. Chauvin.—p. 308.
66 *Adiposis Dolorosa and Lipomatosis. Bourdinière.—p. 309.

Sept. 14, 1918, **33**, No. 37

67 The Feebleminded at the Court Martial. J. Crinon.—p. 313.
68 *Epilepsy, Hysteria and Chorea in a Military Hospital. H. Damaye.—p. 315.
69 *Serum Anaphylaxis. J. Fièvez.—p. 318.

63. **Hexamethylenamin by the Vein in Tuberculosis.**—Loeper and Wagner declare that, in their experience, this drug injected intravenously in a daily dose *of 1.25* or *1.5 gm.* for about twenty days seemed to exert a *decided action on* the general febrile, toxic and septic reactions in tuberculosis, without any depressant action. It seems to reduce the toxicity of the infection, wherever the *infectious process* may be located. In one case described in detail, the sputum swarming *with tubercle bacilli*, remarkable improvement was realized under two series of seven injections by the vein, a total of *21 gm. of the hexamethylenamin*. The young man had *nephritis with* 5 gm. albumin and ureosecretory constant of *0.24, besides the tuberculous left* bronchopneumonia.

66. **Adiposis Dolorosa.**—In the case described the typical adiposis dolorosa developed in a girl of 16 whose *menses* had been suppressed for several months. The pains returned at *monthly intervals* and the clinical picture showed great improvement under ovarian treatment. After two years of suspension menstruation returned, and since then the paroxysms *of pain have been much less* pronounced. The pituitary region seems to be normal, as also the thyroid. In another case *the* young officer has small movable lipomas on the forearms, absolutely symmetrical. They developed at about 16, and there is nothing else pathologic to be discovered in the robust young man. The lumps are only slightly painful.

68. **Epilepsy, Hysteria and Chorea in Advanced Psychiatric Center.**—Damaye gives some examples of convulsions resembling epileptic seizures which developed after exceptional physical exertion, long day and night *marching or manual* labor. A very little alcohol, then, may be the last straw that brings on the convulsion. The effect of a wound or bombardment or getting gassed may also have *this effect*. Epileptics average as high in courage as others, other things *being equal. They are not infrequently* cited for gallantry. Some do heroic acts in a kind of impulsive manner like that in which they sometimes commit criminal actions. *Some* epileptics display symptoms resembling those of neurasthenia, and some who have been trephined present, in addition to all this, attacks of jacksonian epilepsy. In treatment, a quiet *environment, sodium* cacodylate and a milk-vegetable diet *were the main reliance.* In the great majority of the cases the epilepsy dated from early life but had been aggravated by campaign conditions.

69. **Serum Anaphylaxis.**—Fièvez has encountered in the last year fifteen cases of a mild anaphylactic reaction to a second *injection* of antitetanus serum or other serum. The intensely itching urticaria developed suddenly, twenty-four or thirty hours after the repeated injection, in some cases. In one case the interval was only ten minutes. Preventive *injection of calcium chlorid and epinephrin did not seem to* do any good. Although these reactions are not severe, yet their repetition *might prove somewhat serious*, and *nowadays* antitetanus serum is often injected several times as a man *may receive several wounds in the course of time.*

Correspondenz-Blatt für Schweizer Aerzte, Basel

Oct. 5, 1918, **48**, No. 40

70 *Influenza Epidemic. E. Bircher.—p. 1338.
71 Biology of Lice. B. Galli-Valerio.—p. 1341.
72 Development of Bothriocephalus. C. Janicki.—p. 1343.

70. **Influenza.**—Bircher reiterates that his findings in the prevailing epidemic pointed to invasion of highly virulent streptococci, and there was not the slightest evidence to prove that the Pfeiffer bacillus was the cause of the disease. The weather was never so hot or the region so dry and dusty as this summer. Fatiguing work seemed to afford a predisposition, as also the lymphatic-asthenic constitution. About half the cases in his district developed pneumonia. He was impressed with the large proportion of children affected, but he knew of no case in an infant and no severe case in persons over 50. *One robust* person showed the first symptoms at 4 p. m. and died before 10 the next morning. The findings in the lungs were not those of ordinary pneumonia, but resembled more those of pneumonic plague, as German clinicians have also reported. The pneumonia *mortality* was 10 per cent., and severe empyema developed in some of the survivors. In one week he performed ten empyema operations. Some of the influenza *patients* lost up to 20 kg. in weight in one week. Complications were frequent, antistreptococcus serum proved *ineffectual, but antipneumococcus serum* benefited where pneumococci were found present. In some cases the influenza seemed to induce a positive Wassermann reaction. The disease was exceptionally fatal in the pregnant.

Gazzetta degli Ospedali e delle Cliniche, Milan

Aug. 1, 1918, **39**, No. 61

73 Mixed Organic and Hysteric Crossed Hemiplegia after War Wound. A. Roccavilla.—p. 593.

Aug. 4, 1918, **39**, No. 62

74 *Treatment of Primary Serofibrinous Pleurisy. V. Panto.—p. 604.

Aug. 8, 1918, **39**, No. 63

75 *Peripheral Neuritis in Tuberculosis. C. Tarchetti.—p. 614.
76 Disturbances from Artificial Feeding of Infants. R. Costa.—p. 615.
77 Influenza. T. Di Giuseppe.—p. 616.

74. **Treatment of Pleurisy.**—Panto's routine practice in primary pleurisy with effusion is to aspirate from 80 to 100 c.c. of the effusion on alternate days, repeating three or four times, always at a different point; giving digitalis, sodium salicylate and theobromin according to the indications; painting the chest wall with iodin; a light milk and egg diet, and during convalescence, the hypodermic injection of an iodin and iodid solution (Durante's formula). The results have been highly satisfactory in the sixty cases he has treated by this method. The diuresis increased at once, the local relief in the chest was pronounced, and the fever rapidly subsided. The reaction to the mechanical irritation from the repeated puncture aids in the resorption of the effusion until all is gone by the tenth or fifteenth day. The recovery is more rapid the earlier the punctures can be applied.

75. **Peripheral Neuritis in Pulmonary Tuberculosis.**—Tarchetti has encountered ten cases of peripheral neuritis in men with pulmonary tuberculosis at a certain hospital, and he was able to trace it to a favorite prescription in vogue there containing aconite. The neuritis was evidently due to chronic aconite poisoning, as there have been no further cases of the neuritis during the six years since the aconite prescription was discarded. The prescription called for 0.008 gm. of the alkaloid in each hundred parts of the excipient.

Policlinico, Rome

Oct. 13, 1918, **25**, No. 41

78 Tests of Functional Capacity of Heart. G. Galli.—p. 965.
79 Principles of Technic for Transfusion of Blood. G. Egidi.—p. 969.
80 Principles of Technic for Intravenous Injections. Massimi.—p. 970.

Oct. 20, 1918, **25**, No. 42

81 The Prevailing Epidemic. F. Micheli and G. Satta.—p. 989.
82 Mastoiditis from Shell Concussion. G. Bilancioni.—p. 995.
83 Test for Picric Acid Jaundice. E. Pittarelli.—p. 999.
84 Primary Suture of War Wounds. Zapelloni.—p. 1002.

September, 1918, **25**, Medical Section No. 9

85 *Malaria in Military Hospital at Milan. C. Pezzi and G. Polti.—p. 257.
86 Clinical Forms of Malaria. A. Borgherini.—p. 270. Cont'n.
87 Tremor in Malaria. P. Rusca.—p. 278.

September, 1918, **25**, Surgical Section No. 9

88 Albee's Operation for Pott's Disease. D. Maragliano.—p. 257. To be continued.
89 Abdominal War Wounds. G. Egidi.—p. 274. Conc'n.

85. **Malaria.**—Pezzi and Polti urge the necessity for intensive measures during the coming months to cure every case of malaria, so that none will be left from which mosquitoes may get infected next spring and summer. The diagnosis is the first thing now, and every practitioner, they reiterate, should be on the alert to detect malaria.

Riforma Medica, Naples

July, 1918, **34**, Rummo Memorial Number

90 A Gaetano Rummo. In memoria.—pp. 1-28.

Sept. 14, 1918, **34**, No. 37

91 *Adequate Dietaries. E. Maragliano.—p. 726; S. Baglioni.—p. 726.
92 *Atropin as Test for Tachycardia. G. Galli.—p. 727.
93 *Arthrotomy for Purulent War Wound of Knee. G. de Francisco.—p. 729.
94 *Resection of Auriculo-Temporal Nerve for Parotid Fistula. R. Ianni.—p. 731.
95 Nosography of Wounds of Chest. E. Aievoli.—p. 735.

91. **Adequate Dietaries.**—Baglioni replies to Bottazzi's recent publications on this subject, and Maragliano comments on the depressing influence exerted by statements as to the indispensability of certain proportions of certain foods which war conditions, etc., have shut off more or less completely for the present.

92. **Atropin Test for Paroxysmal Tachycardia.**—In a case suspected of malingering, four minutes after a subcutaneous injection of 1 mg. of atropin the pulse dropped from 90 to 73, and the respiration grew slower. Then, the forty-third minute after the injection, suddenly the pulse ran up to 215 and the respiration rate became much increased. The tachycardia lasted for forty-seven minutes and then gradually subsided to 75 by the end of the hour. Even with internal administration of 20 drops of a 1 per thousand solution of atropin it is possible to elicit a typical attack of essential tachycardia in the predisposed, but the interval is over an hour when given by the mouth.

93. **Arthrotomy for Purulent Knee Process.**—De Francisco extols the advantages of a posterior-inner counter-opening in the popliteal space with wounds of the knees requiring drainage. The drainage is much more complete with this than with the usual median popliteal incision, while it is free from the dangers of the latter. He applies it to supplement ample lateral arthrotomy. The incision, about 6 cm. long, is made between the tendons of the rectus muscle and of the semitendinosus. The synovial capsule is incised on the internal tuberosity of the tibia and posterior margin of the internal condyle of the femur, the incision carried up to its superior insertion, guided by the finger or sound introduced into the joint through the inner anterior-lateral incision. At the same time, the bursa of the semimembranosus is incised. The joint is thoroughly rinsed out with boric acid solution and the recesses wiped out with sponges, rinsing then with ether and again with hydrogen peroxid.

94. **Resection of Auriculotemporal Nerve to Arrest Parotid Secretion.**—Ianni reviews what has been published in Europe on this subject, and gives illustrations showing the physiologic basis of the operation. He performed the operation on a soldier with a long war wound of the parotid region that had healed except for a fistula from which saliva poured constantly. The nerve was resected through an incision the same as for ligation of the superficial temporal artery, the nerve being found just below this artery. He isolated the nerve all the way down to the parotid gland and then pulled on it and cut the central end. He thus succeeded in isolating a tract 4.5 cm. long, with the small glandular secretory ramifications. The saliva still poured from the fistula for a few days, but by the seventh day the fistula had completely healed, and no saliva issued from the mouth of the duct of Steno. The cure has been complete during the nearly two years to date. None of the persons who have been operated on by this technic experience any inconvenience from the loss of the parotid secretion, the other glands furnishing abundance of saliva.

Anales del Instituto Modelo de Clinica Medica, Buenos Aires

January-June, 1918, **3**, No. 1

96 Transfusion of Citrated Blood. (La méthode "Agote.") L. Agote.—p. 1.
97 Causes of Error in Wassermann Test. E. Lorentz.—p. 18.
98 *Nature of Acute Rheumatism. L. Agote.—p. 60.
99 Physics and Chemistry of Nervous System. H. Damianovich.—p. 66.
100 *Pathologic Anatomy of Rabies. I. L. Y. *Apphatie*.—p. 73.
101 *Hematology of Intestinal Amebiasis. R. F. Vaccarezza.—p. 108.
102 *Syphilitic Gastritis. R. Novaro.—p. 132.
103 Interpretation of Wassermann Reaction. E. Lorentz.—p. 145.
104 Changes in Blood of Animals under Influence of Diphtheria Toxin. H. Damianovich and J. Outes.—p. 155.
105 *The Syphilitic Eye. E. V. Merlo.—p. 158.
106 Some Notes on Pathologic Anatomy. L. Merzbacher.—p. 159.
107 Parenteral Injection of Milk to Promote Lactation. C. P. Matheu.—p. 168.
108 Nuclei in Vignal-Ranvier Cells. P. Rojas.—p. 171.
109 Regeneration of Nerves. L. Merzbacher.—p. 175.
110 Catalase in the Brain Tissue. M. Amato.—p. 189.

98. **Nature and Prophylaxis of Acute Articular Rheumatism.**—Agote comments on the close analogy between the primary chancre and recurring manifestations in syphilis, the mosquito bite and the recurring febrile attacks in malaria, on the one hand, and the primary infectious sore throat and the recurring attacks of acute polyarticular rheumatism. All

three share a primary lesion and a tendency to recurrence, and are all probably of parasitic origin. It has been his experience that the attacks of acute articular rheumatism occur in spring and fall, never in the extremely cold or the extremely hot months. He has noticed further that the recurrences develop at the same season as the first attack. He cites some cases in which the subjects could thus foretell exactly when a new attack was to be expected. Treatment and prophylaxis, therefore, should be on the same principles as for syphilis and malaria, prolonged and preventive medicinal treatment when recurrence is anticipated. He orders 1 or 2 gm. of sodium salicyate daily during the month before the anticipated recurrence. If the season is very backward, he makes allowance for this. In case of gastric intolerance, he gives 3 gm. in an enema on retiring. When the rheumatism shows a little let-up, he gives the salicylate for a fortnight or month, then suspends for the same length of time and repeats until the rheumatism is conquered. A number of cases are cited in which under this prophylactic treatment there has been no return of the previously annually recurring attacks of the febrile rheumatism every spring. One boy of 14 had had six spring attacks, but has not had the disease since this prophylaxis was inaugurated.

100. ***Pathologic Anatomy of Rabies.***—Apphatic remarks that the filtrability of rabies virus seems to disprove any assumption as to the Negri bodies being the parasite of rabies. It is possible that the spores might pass through the filter—In any event, he declares, the time has come for revision of the problem of filtrable pathogenic viruses.

101. **The Blood with Amebiasis.**—Vaccarezza found the blood much concentrated in some of the twenty-five cases examined, as the result of loss of fluids. In thirteen, eosinophils formed less than 3 per cent.; in five, from 3 to 5 per cent.; in four, from 5 to 7, and in three, from 7 to 10.5 per cent. The differential count in each case is compared with the clinical course, etc.

102. ***Syphilitic Gastritis.***—The husband of the woman of 44 was an old syphilitic and she had had six abortions besides seven still living children. For three months there had been pain in the epigastrium three or four hours after eating, with other signs of an infiltrating gastritis, but the stomach shadow was normal although not flexible. The blood picture was of the chlorosis type, and under intravenous injection of an arsphenamin preparation, recovery was soon prompt, complete and permanent.

105. **The Syphilitic Eye.**—Merlo during the last three years has found that the Wassermann reaction and the course of the case invariably confirmed his diagnosis of syphilis based on the aspect of the eye alone. One eyelid droops slightly, and this unilateral ptosis is accompanied by slight strabismus and a peculiar mixture of vagueness and sadness in the glance. He recognizes the syphilitic by this means, having found this "syphilis eye" *common* in the secondary and tertiary stages of the disease. The eye probably shows the effect of the involvement of the meninges.

Brazil Medico, Rio de Janeiro

May 18, 1918, **32**, No. 20

111 *Protection of Children of Tuberculous Parents. C. Ferreira.—p. 153.

Aug. 10, 1918, **32**, No. 32

112 Brazilian Gregarinas. G. Hasselmann.—p. 249.
113 Malarial Coma. H. Ribeiro.—p. 249.

Aug. 17, 1918, **32**, No. 33

114 The Murmur of Mitral Insufficiency. J. L. de Mesquita.—p. 257.

Aug. 24, 1918, **32**, No. 34

115 Isolation in Leprosy. F. Terra and J. Moreira.—p. 265.
116 Bacteriology of Dysentery at Rio. E. Gomes.—p. 267.

111. **Protection of Children of Tuberculous Parents.**—Ferreira is president of the Liga Paulista contra la Tuberculose, and he was the leading spirit in introducing into Brazil a movement similar to Grancher's plan in France. (This was described in THE JOURNAL, July 6, 1918, p. 1.) He describes the fine results realized by this "Obra de Preservacão" at S. Paulo. In 1914 it had fifty-five children in its charge, from 4 to 16 years old. In 1916 the number was fifty-eight, and two more advisory clinics and two more sanatoriums are planned.

Progresos de la Clinica, Madrid

August, 1918, **6**, No. 68

117 *Complications of Malta Fever. Camacho.—p. 69.
118 **Causal Factors in Cirrhosis of Liver.* F. F. Martinez.—p. 76.
119 *Serous Cysts of the Kidney*; Two Cases. R. *Molla*.—p. 85.
120 Treatment of Erysipelas. A. Perera.—p. 90.
121 Treatment of Atonic Ulcers. A. Perera.—p. 91.
122 Present Status of Cancer Research. C. F. *Arroyo.—p. 95.*
123 Congenital Luxation of Knee. A. T. Pujol.—p. 104.
124 *Sulphur Springs in Treatment* of Syphilis. J. G. Viñals.—p. 123.
125 Lavage of the Stomach. J. L. Yagüe y *Espinosa.—p. 126.*

117. **Complications of Malta Fever.**—Camacho remarks that Malta fever is endemic in his district (Granada) and causes more morbidity than any other disease. It frequently masquerades as pulmonary tuberculosis, typhoid fever, chronic rheumatism or meningitis, or it may be responsible for inflammatory and suppurating processes in joints and long bones. He describes six cases of this kind in children and adults. Inflammation in the synovialis and around joints is so common that it must be regarded as a symptom rather than a complication. The most frequent localization is in the sacroiliac articulation, next, the hip and shoulder. The effusion in the joint is a pure culture of the melitococcus, and when suppuration follows it seems to act like a fixation abscess, diverting the septicemia and generating antibodies to such an extent that prompt recovery ensues.

118. **Factors of Cirrhosis of the Liver.**—Martinez reviews the various factors that have been suggested by others, and then analyzes in detail fifty-four cases from his own practice. Alcohol was unmistakably to be incriminated in 59.25 per cent. In the other cases alcohol could not have been a factor, but infectious diseases, malaria, syphilis, etc., tobacco, lead poisoning or thyroidism evidently had a share in the morbidity of the liver.

Semana Medica, Buenos Aires

July 4, 1918, **25**, No. 27

126 **History of Influenza.* A. Marco Del Pont.—p. 1.
127 *Roentgen Findings After Intramuscular Injection* of Iodin Preparations. J. F. M. Gomez.—p. 10.
128 Campaign Against Tuberculosis. E. R. Coni.—p. 14.
129 *Register of Criminals. V. Delfino.—p. 15.

July 11, 1918, **25**, No. 28

130 *Complications of an Otitis. M. J. Rizzi.—p. 33.
131 Movement *of Eyelid, Associated* with Mastication. C. S. Damel and A. Natale.—p. 41.
132 Vaccination Against Typhoid in Argentina. J. A. Lopez.—p. 45.
133 *History and Comparison* of Pubiotomy and Symphysiotomy. T. *Chamorro.—p. 50.*
134 The Campaign Against Venereal Disease. A. M. Gimenez.—p. 56.

126. ***History of Epidemics of Influenza.***—Del Pont is professor of epidemiology at Buenos Aires, and his historical review of 125 pandemics of influenza shows that 50 occurred in the winter, 35 in the spring, 16 in the summer and 24 in the fall. The first reliably recorded epidemic was in 1173, while authentic accounts of plague are on record from 2,030 years before our era. Among the odd facts he relates is the history of a ship in 1781 on which influenza developed in mid-ocean—no cases having been known in the port from which it sailed. Every person on the ship was stricken, and when it arrived at Canton the disease was found epidemic there, the first cases having developed at about the same date in Canton and on the ship in mid-ocean.

129. **National Register of Criminals.**—Delfino urges a national central headquarters where the data for identification of each criminal can be kept filed for ready reference, and where the outcome of each criminal court trial is duly and promptly filed. The courts of the country thus can obtain the complete summary of the criminal's career to date, and thus be enabled to pass judgment with true justice in each case, discriminating between the occasional and the habitual criminal. The scheme proposed provides for quick action on each demand for data, the records to be accessible only to the duly qualified authorities.

130. ***Complications of an Otitis.***—Rizzi's patient was a man of 34 with postinfluenzal right otitis media from which devel-

oped thrombophlebitis with suppuration and septicemia, with an abscess in the cerebellum. The man was finally completely cured after a two years' course of treatment including four extensive operations and twenty-six punctures of the brain.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

Aug. 10, 1918, **2**, No. 6

135 Sunlight in Treatment of Tuberculosis. P. B. Middendorp.—p. 427.
136 Influenza in Garrison. W. F. Enklaar and S. van der Veen..—p. 442.
137 Influenza. J. M. Wiggelendam.—p. 445; J. W. Napjus and J. Hontman.—p. 448.
138 *Tumors of Spinal Dura Mater. G. C. Bolten.—p. 450.

Aug. 31, 1918, **2**, No. 9

139 *Radiotherapy of Uterine Cancer. G. F. Gaarenstroom.—p. 727.
140 *Radiotherapy of Superficial Cancer. J. H. Kuijjer.—p. 734.
141 *Exploratory Puncture of Cancer. H. T. Deelman.—p. 744.
142 Influenza. D. N. van Gelderen.—p. 749.
143 Case of Missed Labor. L. F. Driessen.—p. 750.

138. **Cancer in Spinal Dura Mater.**—Bolten refers to primary tumors, and reports eight cases. Paresthesias and neuralgia are usually the first symptoms, but sometimes the first signs of trouble are from interruption of spinal cord functioning. In the early stages, roentgen examination is negative except when the tumor is a calcified fibroma. In only one of his eight cases was the roentgen outline distinct. At the same time, roentgen examination is very important as positive findings are so significant. Laminectomy is not particularly dangerous, and three of his patients recovered. The operation was done under local anesthesia in some of the cases. That his results were not constantly favorable was due to intercurrent pneumonia or to the general debility. These eight operative, plus two cases in which no operation was attempted, were all encountered in one year recently. One of the two patients who refused operative treatment was a man of 48 and surprising improvement followed roentgen exposures, both the violent neuralgia and the motor disturbances subsiding completely, with no return during the six months of apparently perfect health to date. Judging by other experiences, a metastatic tumor in the dura must be regarded as hopeless; they are comparatively common with ovarian and prostate tumors. Complete interruption of spinal cord functioning seldom retrogresses, even after removal of the tumor,, although he pains may have disappeared.

139. **Radiotherapy of Uterine Cancer.**—Gaarenstroom's experience with 67 cases of uterine cancer, all inoperable but 4, has confirmed the value of the combination of radium and roentgen treatment. Not that there is any essential difference between the effect of the rays on the cancer, he says, but because the anatomic and physical conditions enable one to supplement the other more effectually. His technic includes curetting, radium, 100 mg. for twenty-four hours, then roentgen exposures, vaginal, sacral and abdominal, concluding with a repetition of the radium dose, and all within four weeks, not allowing the cancer cells a chance to recuperate. Of the 58 inoperable and otherwise doomed patients, 11 have been free from appreciable manifestations of their malignant disease during the months since, from fifteen to twenty-six months in six. Great improvement was realized in 7 other cases, and 3 were improved. In only 3 of the total 58 cases was there no benefit.

140. **Radiotherapy of Superficial Cancer.**—Kuijjer reports from the same institution the experiences with superficial cancer in 63 cases. The details are tabulated for comparison, and some especially instructive cases are described in full. All were cured or improved, 24 of the 26 smaller cancers being listed as quite cured, as also 11 of the 17 large ones, 5 of the 10 very extensive ones, and 4 of the 8 lupus cancers. There has been recurrence in only 4 cases, and these were in the two first mentioned groups.

141. **Exploratory Puncture of Malignant Tumors.**—Deelman expatiates on the superior advantages of puncture over excision for differentiation of tumors. A fine needle is worked into the tumor and, as the piston is drawn up, scraping movements are made with the tip of the needle. The syringe then contains a little bloody fluid with minute scraps of tissue. It is remarkable how clear the histologic findings often are in scraps no bigger than the point of a pin. He treats them with formaldehyd, followed by acetone. This puncture can be done in the office or in the bed, and he has never had any mishaps with it or by-effects in the twelve cases in which he has applied it to date, while the findings were extremely instructive, as he shows in a plate from some of the cases.

Hospitalstidende, Copenhagen

May 15, 1918, **61**, No. 20

144 *Action of Pathologic Serum on Photochemical Processes. H. Haxthausen.—p. 609. Commenced in No. 19.—p. 578.

144. **Dermatitis from Exposure to Light.**—Haxthausen remarks that hematoporphyrin, some element in maize, and a certain kind of buckwheat are the only substances that to date have been directly incriminated in the production of certain skin affections traced to the action of sunlight, hydroa vacciniforme, etc. But there is evidence to prove that many substances under certain circumstances may have a sensitizing action on the skin. He has been studying the blood serum of patients with solar eczema or Hutchinson's prurigo restricted to the exposed portions, face, hands and forearms. The most easily studied photochemical process in the blood is the hemolysis by light, and his tests showed a much higher hemolysis index in the serum of persons with this polymorphous light dermatitis than in normal serum or in serum from other forms of dermatitis. The difference is most marked the stronger the concentration.

Hygiea, Stockholm

Sept. 30, 1918, **80**, No. 18

145 *Obstetrical Paralysis. E. Rodhe.—p. 1041.

145. **Obstetric Neuritis.**—In two of the three cases reported of traumatic puerperal neuritis and paralysis, forceps had been used. In the other case delivery proceeded spontaneously, but was long protracted. The symptoms of neuritis developed immediately after delivery in one, during the first stage of labor in one, and during the last half of the pregnancy in the third woman. The pains and paralysis in the legs subsided in the course of six weeks, three and six months. The literature on neuritis after parturition is reviewed, and the etiology discussed.

Norsk Magazin for Lægenvidenskaben, Christiania

October, 1918, **79**, No. 10

146 *Atypical Cases of Acute Leukemia. L. Dedichen.—p. 1105.
147 Cystic Ureteritis. F. Harbitz.—p. 1126.
148 Weight and Length of New Born Infants in Norway. C. L. Nielsen.—p. 1134.
149 Case of Paralysis of Brachial Plexus. S. F. Holst.—p. 1146.
150 Angina Pectoris. K. Motzfeldt.—p. 1158.

146. **Atypical Leukemia.**—Dedichen reviews the literature on atypical cases of leukemia and reports two cases which ran their course like an infectious disease with pronounced hemorrhagic tendency and gangrenous processes but no swelling of glands, although necropsy showed microscopic leukemic changes in them. There was leukopeny with lymphocytosis and severe anemia of the pernicious type. The girl of 12 and man of 35 died in less than three weeks and seven weeks after the first symptoms. Bacteria could not be cultivated from the blood during life, but streptococci and other species were found in the spleen. The third patient was a boy of 10, afebrile, no hemorrhagic tendency nor swelling of peripheral glands, but the spleen and liver were enlarged, and a lympho-sarcoma in the place of the thymus and the Mikulicz syndrome were accompanied by anemia and the blood findings of acute lymphatic leukemia. No bacteria could be cultivated from this case.

Svenska Läkaresällskapets Handlingar, Stockholm

Sept. 30, 1918, **44**, No. 3

151 *Fetal Vascular Layer of the Lens. J. W. Nordenson.—p. 407.
152 The Physiology of Swimming. G. Liljestrand and N. Stenström.—p. 441.
153 *Behavior of Heart During Swimming. G. Liljestrand and J. Lindhard.—p. 495.

151. **Structure and Retrogression of the Vascular Coat of the Lens.**—The research reported was done on cattle fetuses.

153. **Swimming.**—The respiratory interchanges were studied on nine healthy persons during swimming exercises and compared with the findings in a similar group at rest. The blood pressure, the resistance offered by the water to the expansion of the chest, and other elements of swimming are discussed. The volume per minute and the blood pressure both increase during swimming exercises, so that the work of the heart is exaggerated more than with other forms of exercise as a rule.

Ugeskrift for Læger, Copenhagen

Sept. 19, 1918, **80**, No. 38

154 *Influenza Epidemic. V. Bie and others.—p. 1501; V. Scheel. —p. 1510.
155 *Meningococcus Carriers. T. V. Hyge.—p. 1514.

Sept. 26, 1918, **80**, No. 39

156 *Hysteric Spasm of the Esophagus. S. Monrad.—p. 1539.
157 Hair Ball Removed from Stomach of Girl under 4. S. Monrad. —p. 1546.
158 *Experiences with the Wassermann Test. Ehlers and Aaskow. —p. 1550.

Oct. 10, 1918, **80**, No. 41

159 *Death Following Directly on Roentgen Treatment of Exophthalmic Goiter. K. Secher.—p. 1613.

154. **Influenza.**—The experiences related from Copenhagen indicate that at the same time as the epidemic of influenza—and probably a consequence of this, by the predisposition induced—a pneumococcus epidemic developed which far outshadowed the other in gravity. Sputum collected from the influenza patients immediately on entrance into any of the hospitals showed invariably numerous pneumococci, alone or predominant, whether the patient developed pneumonia later or not. Pfeiffer bacilli were not found. Similar experiences are cited from Germany. Pfeiffer himself was unable to find the influenza bacillus in a number of cases, as also Gottschlich, Schürmann and Uhlenhuth, while Kolle, Friedmann, Mandelbaum and Gruber did not find it at all. In conclusion Curschmann's report is mentioned, dated 1908, of an epidemic of "influenza" prevailing at that time in Leipzig for which the pneumococcus seemed to be exclusively responsible.

Bie and his co-workers are not positively certain that the small, distinct, regularly circumscribed colonies of diplococci were actually the *Diplococcus lanceolatus* of Fränkel. They were found constantly, gram positive, lanceolate, usually encapsulated, even when they occurred in chains. In twenty-eight cases these diplococci were cultivated pure from the sputum or droplets coughed on agar plates as soon as the patients entered the hospital, and pneumococcus septicemia developed in twenty-two of twenty-three mice injected with the sputum. The diplococci developed always either in pure cultures or as the predominating bacteria. The gross bacteriologic properties of this diplococcus and of the pneumococcus are identical, they say, but it is possible that the two may not be identical but of a closely allied species. This is suggested by the lytic drop in the temperature, which was frequently observed, as also by the occurrence of the diplococci in chains. All the links in the chains, however, were always capsule-bearing diplococci.

Scheel, in discussing what he calls the *morbus ibericus*, relates that in Norway there was quite a conflict between the physicians and pharmacists, on one hand, and the government on the other. The government had prohibited the dispensing of alcohol and strong wines, even on a physician's prescription. But the pharmacists refused to submit to this prohibition, and the government had to rescind it. Scheel adds that it is certainly doubtful whether alcohol acts as a preventive, as some believe, and owing to the prolonged course of the epidemic its use for this purpose is not to be recommended.

155. **Meningococcus Carriers.**—Hyge cites Chievitz' report that 6.8 per cent. carriers were found among 1,175 persons in the environment of meningitis patients, and 7.8 per cent. of 1,790 not known to have been in contact with cases. Only one carrier was found in 400 children; 3 among 240 civilians in a Copenhagen policlinic, and 18 per cent. among 240 soldiers in the hospital for other than respiratory affections. Thomsen and Wulff's recent compilation showed 2.1 per cent. in 474 new recruits. The meningococci may be found three or four weeks after they have apparently disappeared from the nasopharynx, but they usually vanish in about three weeks, although cases are on record of persistence for months, up to eighteen months in Kutscher's case (1912). Hyge doubts whether gargling or nose douches are effectual, advocating rather occupation out of doors and keeping away from other people as much as possible, especially during the hours of sleeping and eating, with special care as to sneezing, coughing, etc.

156. **Hysteric Spasm of Esophagus.**—The 5-year-old girl presented a grave clinical picture exactly like that with stenosis from corrosion by a caustic. Monrad commenced dilatation with a fine catheter and found that the esophagus was completely permeable. The child had actually drunk some caustic, but the first symptoms of stenosis did not appear until three months later after she had heard of a relative who had developed stenosis from such a cause. In a boy of 5 the conditions seemed to indicate a congenital diverticulum in the esophagus, but in this case also the esophagus proved to be normal on roentgenoscopy and under chloroform, although every attempt to introduce a catheter met with impassible resistance at the lower third. In this case the spasm in the esophagus had been noticed during the first year of life, the spasm occurred at different levels of the esophagus at different times, and the esophagus returned to apparently normal size and shape afterward, with no tendency to dilatation. In a third case a girl of 6 had had typical hysterical anorexia for several years, and Monrad was not surprised when the child developed the clinical picture of a diverticulum of the esophagus. A surgeon consulted counseled gastrostomy to strengthen the child for an operation on the esophagus, but Monrad found that the spasm subsided abruptly under introduction of a No. 31 catheter, after the smaller series had been constantly arrested at a point 25 cm. from the teeth. The child was apparently completely cured of all disturbances and ate with good appetite for weeks, but was brought back to the hospital a month after her dismissal presenting the same clinical picture of stenosis as before. Again it yielded to catheter treatment. In the second of the three cases, the threat of catheter treatment sufficed to arrest the spasm on several occasions.

158. **Experiences with the Wassermann Test.**—Ehlers states that in a recent series of 1,091 patients in his service at the Kommunehospital, 371 were syphilitics. In ten cases the routine Wassermann test was the only thing that gave the clue to the syphilis, confirmed by the course of the cases. He does not accept as sole testimony of syphilis a single positive response with negative responses afterward.

159. **Death Following Roentgen Treatment of Exophthalmic Goiter.**—Secher reiterates that the enlarged thyroid gland responds to roentgen treatment in very different ways in different cases. In several cases cited, an ordinary goiter seemed to become transformed into the exophthalmic type under roentgen treatment. Belot and Simon, among others, have declared that a correctly given course of roentgen treatment is free from danger, but Secher insists that this is not true. The thyroid may be whipped up to function to excess, or it may become functionally insufficient. A tendency to myxedema, however, is rare, but numerous cases of aggravation of hyperthyroidism have been reported, even with the most modern improved technic. Rieder and Verning have reported each one or two cases in which the aggravation was so intense that the patient died, and Secher now adds another case to this list of fatalities. His patient was an unmarried woman of 40, previously healthy until exophthalmic goiter developed. The thyroid was given roentgen treatment after a year, eight exposures, each ½ Saubouraud-Noiré unit, distributed in four fields, three on the thyroid and one on the thymus. Her symptoms became much aggravated at once, with restlessness, choreiform movements, pulse 100 to 200, and heart beat up to 240, respiration 72, and death the fifth day. The thyroid showed very slight changes and the thymus nothing abnormal.

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IMPORTANCE OF A COMPLETE ROENTGEN STUDY OF GASTRO-INTESTINAL TRACT AND GALLBLADDER

IN ALL OBSCURE ABDOMINAL CASES *

GEORGE E. PFAHLER, M.D.
PHILADELPHIA

Generally a roentgen study of the gastro-intestinal tract is limited to the obscure cases. In such cases it is our duty to make the study complete. By a complete study, I mean the investigation of the gallbladder region for gallstones, enlargement and adhesions; a study of the stomach to prove that it is either normal or abnormal, and if abnormal, in what respect it is abnormal; a study of the duodenum; a study of the head of the pancreas; a study of the course of the food through the small bowel; a study of the appendix and the appendiceal region; a study of the colon, and very often it is advisable to make a study of the spinal column and of the urinary tract. If the spinal column and sacro-iliac region or the kidneys, ureters and bladder are to be studied, it should be done preceding the study of the gastro-intestinal tract, and should be done while the stomach and bowels are empty.

Such an extensive study involves more time and expense than an incomplete investigation, but gives a great deal more information and enables the physician or the surgeon to know the pathology and the function of these various organs so that he has a complete outline for his treatment. The expense and time consumed are increased, but one mistake will cost the physician and the patient more than ten complete examinations. Therefore, as a matter of economy as well as of efficiency, the examination should be complete. I have seen the futility of incomplete examinations so often that I almost refuse to make an incomplete study. The great majority of patients, sent to me for an examination of the "stomach" because of stomach symptoms, do not have any lesion in the stomach, but have disease of one of the other organs, most often the gallbladder or the appendix. If I were to confine my examinations to the stomach, because of the stomach symptoms, the patient would have spent time and money and would be little nearer a diagnosis than before. This is an embarrassment to the physician, a disappointment to the patient, and, to say the least, a detriment to the roentgenologist.

This does not mean that one should go through one of these abdominal studies in a routine and mechanical fashion, giving equal attention to each organ in each particular case, but, in the light of the symptoms and history, one should make an examination of all the organs, laying the greatest stress on the organ that is under suspicion, or on the organ which, during the course of the examination, suggests some pathologic condition. I have had patients who had been sent to me for gastric ulcer, and have found stone in the kidneys as the cause of the symptoms. In others, duodenal ulcer, or gallstones, or appendicitis, or intestinal stasis produced the symptoms. On the other hand, I have had patients sent for a study of the bowels because of a diarrhea and have found perforating gastric ulcer. I have had patients sent with a definite diagnosis of pyloric obstruction, probably due to carcinoma, and have found cardiospasm with enormous dilatation of the esophagus, so that the esophagus held quarts of fluid, and no lesion of the stomach. Often a patient is sent to me with suspicion of disease in the duodenum and I find gallbladder disease, or chronic appendicitis. On the other hand, symptoms of gallbladder disease are frequently due to chronic appendicitis. In some of the cases, the appendix is attached in the gallbladder region, which accounts for the peculiar location of the symptoms.

PROCEDURE

It is therefore my custom to allow at least forty-eight hours for one of these studies. I then request that the patient be given a bottle of magnesium citrate or some other agreeable purgative at 9 o'clock on the evening preceding the examination and ask him to report the following morning at 9 o'clock without breakfast, at which time, if there is any suspicion whatever of the possibility of disease in the urinary tract, a set of plates is made of the kidneys, ureters and bladder. If there is considerable aching about the spine, several plates are made of the spine. Then from six to eight plates are made of the gallbladder region. The patient is then taken into the fluoroscopic room. A hasty inspection of the chest is made with the fluoroscope, the condition of the lungs is noted, the movements of the diaphragm, the expansion of the chest, and the movements of the lung markings. The heart is studied as to size, shape, position, peristaltic movements. The mediastinum is reviewed. The abdominal cavity is inspected generally as to the curve and position of the diaphragm, and the outline of the liver and of the spleen. Very frequently one may observe the outline of the kidneys and at times detect the presence of a kidney stone preceding any opaque meal. Rarely one may even detect a stone in the gallbladder region.

I then give the patient an opaque meal, watch it pass down the esophagus, note the movements of the walls of the esophagus, the general diameter, the amount of delay at the cardia, the opening of the cardia, and the passing of food through the cardiac orifice into the stomach. I then note the rate at which the opaque material falls to the bottom of the stomach, for generally one may detect a dilated stomach merely by the characteristics of the passage of the opaque meal to the lower pole, either through gas or generally through a collection of fluid when the stomach is dilated. One may judge the tone of the stomach by the passage of the opaque meal from the upper pole into the lower pole. As the stomach fills up, one may study its size, shape, the presence or absence of filling defect, and the presence or absence of any spasmodic contraction. If spasmodic contractions are present, it is then one's duty to determine their cause, which may be either intragastric or extragastric. If no spasm is present, one searches for filling defect, and any filling defect, excepting at the pylorus, may be detected fluoroscopically. A filling defect, however, may be present at the pylorus and may be detected only after a complete series of plates is made of this particular region. I believe that valuable evidence of gastric ulcer should be detected in about nine tenths of the cases, and in the great majority of them a definite diagnosis may be made. A perforating gastric ulcer is indicated by a projection of the opaque material beyond the outline of the stomach wall.

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* Read before the Section on Gastro-Enterology and Proctology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

The absence of a filling defect means the absence of carcinoma, and I believe a negative diagnosis of carcinoma may be made when one is certain that no filling defect is present. Yet even when a filling defect is present, one cannot always ascribe it to carcinoma, as it may be due to adhesions, or inflammatory exudate secondary to a perforating gastric ulcer, or to pressure from the outside. The actual differentiation between carcinoma and gastric ulcer is a microscopic one, and in early cases cannot be made either from the roentgenologic or macroscopic appearance, for the stage at which gastric ulcer develops into carcinoma is almost beyond recognition by the microscope. All cases having macroscopic evidence of carcinoma of the stomach should be recognized roentgenologically. Fine differentiation between indurated gastric ulcer and early carcinoma is, however, unnecessary, for such lesions should always be excised at operation and treated as if malignant.

INTENSIVE STUDY OF ORGANS

The Stomach.—The position of the stomach does not carry with it the significance that was attached to it a number of years ago. We all know now that the stomach does not have the shape nor position which was so commonly described in textbooks of ten or more years ago, and with which we, at that time, were accustomed to make our comparison of our stomach findings and to arrive at the conclusion that anything different from those anatomic illustrations was abnormal. We know now that this is not true, and that the greatest variation in the position, the outline and the shape of the stomach may be present and be entirely consistent with health and must, therefore, be considered normal. I believe that there is as much variation within normal limits with regard to the stomach in its shape and size as there is between the shape and size of various men's noses. The variation in the size and shape of a man's nose may have some significance, but it cannot be looked on as evidence of pathology. So, too, variations in the form and position of the stomach may be of some clinical significance, but can not of themselves be looked on as pathologic. The brilliant work done by Mills[1] has done much to clarify this subject, and to teach us that the size, shape and position of the stomach is very often only a matter of type, and belongs to a type of man or woman just as the size and shape of his nose belongs to his type. The size, shape and position of the stomach, however, do help us to arrive at conclusions with regard to type and our dealings with the symptoms in this type of individual may be influenced by this knowledge.

The Pylorus.—The pylorus that presents smooth gastric and duodenal surfaces is generally healthy, but even so it may be very much thickened, and this thickening may be evidence of a long-continued pyloric spasm. One may find the pyloric line of sphincter measuring approximately one-half inch in width instead of one eighth of an inch as is normal. I believe that such thickened pyloric muscle is evidence of a pathologic state, even though it may not be evidence of a local pathology. A smooth duodenal surface associated with a jagged gastric surface of the pylorus should always arouse the suspicion of carcinoma, and one should not give up until this has been proved negative. In all doubtful cases there should be a large series of small plates, or multiple exposures, taken so as to get the fixed deformities about this valve, making from twenty to forty plates or photographic exposures of this region. On the other hand, if by careful fluoroscopic examination I can clearly see the outline of the wall of the stomach and peristaltic waves moving up accurately to the pylorus, and if everywhere I find smoothness and regularity of movement, I frequently make no plates whatever of the stomach and pylorus.

The Duodenum.—This organ is studied both fluoroscopically and by plates as to its position, its outline, its peristaltic movements and filling defect, and its retention. One should recognize, I believe, at least 95 per cent. of duodenal ulcers, and this evidence is indicated by filling defect or abnormalities in the outline of the duodenum, particularly the first portion. A filling defect or an irregularity about the duodenum does not always mean duodenal ulcer, for the same defects may be caused by adhesions or even by spasms, but when spasm is present, one must always think of a duodenal abrasion or early duodenal ulcer. I am more concerned over a duodenal spasm than over a fixed indentation or niche in one of the borders. A fixed indentation of the first portion of the duodenum, together with contraction of the entire duodenum in practically all instances is due to duodenal ulcer. Like the study of the pyloric end of the stomach, any doubtful sign of disease in the neighborhood of the duodenum should be studied by a large series of plates with at least from twenty to forty exposures. These may usually be small enough to embrace only the pyloric end of the stomach and the duodenum. These plate studies of the pyloric end of the stomach and the duodenum also frequently give valuable evidence as to the gallbladder, either in demonstrating calculi or in demonstrating displacement defect due to an enlarged gallbladder.

The Gallbladder.—The study of the gallbladder should show rather definite evidence of gallstones in about 50 per cent. of the cases in which they are present, and doubtful evidence, which has some confirmatory value, in about 25 per cent. more. The demonstration of gallstones depends chiefly on the character of their composition, but also on the absolute stillness of the gallbladder, the amount of tissue overlying it, and the contents of the gallbladder. A gallbladder filled with fluid may give little or no evidence of the outline of gallstones, but one may get a general outline of it because of its increased density. This I have observed in a number of instances in connection with the strawberry gallbladder. Adhesions in the gallbladder region are indicated by abnormal attachments of the surrounding organs, such as the duodenum, the stomach, the colon, and are particularly recognizable when one is dealing with an otherwise gastroptotic stomach, in which one finds the duodenum hooked up very definitely in the gallbladder region, thus changing the entire shape of the stomach. Even the appendix may be distinctly attached to the gallbladder. One, of course, cannot observe the actual adhesions. One only recognizes the effect of the adhesions as is indicated by the displacement or fixation of the organs containing the opaque material.

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[1] Mills: The Relation of Bodily Habitus to Visceral Form, Position, Tonus and Motility, Am. Jour. Roentgenol., 1917, 4, 155.

The Small Bowel.—As the food passes through the small bowel, one should notice any abnormal delay in any particular portion, any evidence of fixation or kinking, or excessive dilatation.

The Appendiceal and Cecal Regions.—The most favorable time to study the appendix, the cecum and the ileocecal region is at the sixth, eighth and twenty-fourth hour period, and at each of these periods one should make a careful fluoroscopic study, together with palpation by means of a wooden spoon. I prefer a wooden spoon covered with a metallic circle which will always enable me definitely to localize the point of pressure. At times, one may find the appendix filled at the end of six hours, and yet empty at each other study. The importance of seeing the appendix filled is shown by the fact that one may definitely localize its position and determine, to a certain extent, its mobility or other evidence of adhesions. Very generally the appendix is visualized at the end of eight hours, and in nearly all instances it may be seen at the end of twenty-four hours. If it is not visualized, it very commonly means that the lumen has been obliterated, or that it may be filled with exudate.

DIAGNOSTIC FEATURES OF APPENDICITIS

The important diagnostic points with reference to the appendix and chronic appendicitis are:

Localized Tenderness.—This is the most valuable sign obtained, and is elicited either by direct palpation under the screen by means of the gloved hand, or much better (which is my practice) by means of a wooden spoon-like instrument, called a "distinctor." This wooden spoon may be passed readily under the screen and is controlled by the hand above the screen over the protection of the lead glass. If this spoon is surrounded by a rim of metal, one can easily see it move around over the different parts of the colon and of the abdomen, and by watching the ring can definitely localize the tenderness of appendicitis in the cecal region or over the appendix, wherever it may be located. When the appendix is visualized (that is, when the barium meal enters the appendix so that it may be distinctly seen), one can often localize the tenderness directly over the appendix, and when the appendix is movable not infrequently the localized tenderness moves with the appendix. I have been able, in a number of cases, to move the appendix as much as three or four inches, and in each instance the sharply localized tenderness moved with the appendix. This may seem contradictory, in view of some ideas of the sensibility of the viscera, but whether contradictory or inconsistent, it is a fact. Without suggestion to the patient, I have been able to move my wooden spoon around over the abdomen, and in each instance, when I came back to the location of the appendix, the patient complained of pain, even though I had moved the appendix from its original place. This tenderness is persistent and is present throughout the various studies made. At times it is acute, and sharply localized, and at others it is more or less general and less acute. A vague tenderness is more common when the appendix is retrocecal, in which instance there is considerable soreness, but the tenderness is not sharply localized until one twists the patient in such a manner as to bring the pressure directly to bear on the appendix, in which instance the pain is often quite acute. If no tenderness is present, and if at the same time the cecum is freely movable, I believe that one may say that no appendicitis exists. If, on the other hand, there is localized tenderness over the cecum, with fixation of the cecum, and no visualization of the appendix, it very frequently means an obliteration of the appendix by inflammatory exudate, which prevents the appendix from filling with the barium meal. Localized tenderness, with fixation of the cecum, and without filling defect, I believe, is strong evidence of appendicitis. Clinically the surgeon and the physician are apt to look for tenderness over McBurney's point. As we have many opportunities of studying the position of the appendix and the localized tenderness, we realize how much in error we may be if we depend on localized tenderness over McBurney's point as evidence of chronic appendicitis. For example, if the appendix is located deep in the pelvis, there will be absolutely no tenderness over McBurney's point. Likewise, if the appendix is located in the hepatic region, and very commonly when it is retrocecal, there is no localized tenderness over McBurney's point. Then, too, the appendix may be on the left side instead of the right, either because of nonrotation of the colon or complete transposition of the viscera.

Demonstration of the Appendix.—The appendix may occasionally be demonstrated by the opaque enema, but in many more instances it is demonstrated by means of the opaque meal, particularly when administered with buttermilk. I believe that, in the majority of cases referred for gastro-intestinal study in which the barium and buttermilk meal is administered, the appendix may be demonstrated if one looks for it at the end of eight hours, at the end of twenty-four hours, and at the end of forty-eight hours. It is not always visualized in a plate made of this region, but if one palpates the cecum by means of the wooden spoon, or distinctor, if the appendix has been filled with the barium, it may always be demonstrated, I believe, even if it is lying behind the cecum. To accomplish this, one should rotate the patient to the right or to the left sufficiently to bring the posterior surface of the cecum into view. The appendix may then be demonstrated if it is filled with opaque material. I believe that no case is thoroughly studied unless this procedure is followed.

Fixation.—A chronically inflamed appendix is very apt to become more or less attached to the surrounding tissues. It may be attached only at its tip, in which instance the greater portion of the appendix could be moved around freely, together with the cecum, and yet the tip of the appendix remain in a stationary position. On the other hand, the appendix may be fixed throughout, or it may be fixed at its base, and its tip may be movable. However, absence of fixation, or evidence of adhesions about the appendix must not be regarded as negative evidence in the diagnosis of chronic appendicitis, for we all know that an appendix may be inflamed and yet be freely movable. In this instance, the localized tenderness again is of value.

Position of the Appendix.—Normally the appendix is directed downward into the pelvis, but normally it is freely movable, and changes its position without external influence to a considerable extent during twenty-four or forty-eight hours. It not only changes its position but its shape, indicating that there is likely some vermicular or peristaltic movement associated with the appendix. One may find, therefore, an appendix producing chronic appendicitis lying in a normal position in the pelvis, or lying transversely, or lying along the inner side of the ascending colon; or it may be retrocecal, or, as in one case of mine, it may be wound around the pyloric end of the stomach. In a number of instances, I have found it up in the gallbladder region, in which instances, the patients are generally sent for a gallbladder examination rather than an appendiceal study. In general, when the appendix is directed upward or is retrocecal it is more likely to indicate chronic appendicitis.

Kinking or Angulation.—The mere bending of the appendix has no significance, for its shape will vary many times within twenty-four hours, but if there is a fixed angulation it is very commonly due to an adhesion at the point of fixation. This has distinct significance.

Constriction.—Constriction, or dilatation, or irregularities in the lumen may consist of a bulbous portion, or the whole appendix may be much dilated, or one may have marked irregularity in the lumen. All these conditions, I believe, have pathologic significance.

Abnormal Retention.—If the appendix remains filled with barium after the cecum and ascending colon have become empty, or after the entire colon is emptied, I believe it has pathologic significance.

CECUM AND ASCENDING COLON

At the same time that one is making records of the appendix, one should note abnormalities of the cecum and the ascending colon, such as fixation, abnormal position, abnormal dilatation, and filling defect or abnormal retention, for one may find retention in the cecum after the remainder of the bowel has been emptied one, two or three days, and this must be recognized as an abnormal condition. One should also study the mobility of the ascending colon and its relation to the transverse colon or the surrounding tissues. If careful palpatory studies are made under the screen, one may commonly diagnose the presence of any adhesions or any evidence of a jacksonian membrane, or kinking or angulation at the hepatic flexure. The same observations may be made with regard to the remainder of the colon.

Carcinoma of the Colon.—It must be borne in mind that carcinoma of the colon may exist for a considerable period of time without giving rise to symptoms, and even after it gives rise to some symptoms many months and even years may pass before the colon is entirely obliterated or true obstructive symptoms develop. So, too, when one is making observations of the opaque meal in its passage from the mouth, one rarely finds in the early stages any appreciable localized obstruction or stoppage of the bowel. If filling defects in the bowel are seen, they must always be confirmed by means of an opaque enema, for it is my experience that the opaque meal may pass for a considerable time from above, and yet an enema be totally obstructed at the point of constriction. This must, of course, be due to some localized associated spasm. Generally, even though the constriction in the bowel is very small, an opaque enema passes through the constriction and gives a very definite and fixed deformity of the bowel which may commonly be recognized definitely as carcinoma. It is my practice to follow an opaque meal through the bowel for forty-eight hours. This gives one a fair idea as to the general function of the gastro-intestinal tract, and enables one to recognize adhesions, localized tenderness, etc., and then finally at the end of forty-eight hours, if one gives an enema and fills the entire bowel, any filling defects are noticed more definitely and positively than can be done in any other way.

The Ileocecal Valve.—The incompetence of the ileocecal valve, which is common, may be recognized very often by passing a meal from the mouth, and at times one may find the ileum entirely empty at the sixth or the eighth hour period, and yet at the end of twenty-four hours find the ileum still filled with the opaque material. This can only mean that there has been regurgitation from the bowel into the ileum, most likely due to reverse peristalsis. Patients presenting this evidence of an incompetent ileocecal valve commonly have colicky pains, often a diarrhea, and very generally a considerable amount of gas, nausea and general distress. The incompetence of the ileocecal valve, I believe, is most commonly due to intestinal stasis, and is generally associated with an atony or stretched condition of the ascending colon, and this incompetent valve is simply a part of the general stretching of the colon. At times the incompetence of this valve is due to adhesions, secondary to chronic appendicitis or to a perityphlitis. If, on the other hand, one finds no intestinal stasis present, and does find some evidence of chronic appendicitis, the presumptive evidence is that the incompetence of the ileocecal valve is due to chronic appendicitis or to a perityphlitis.

ADVANTAGES OF COMPLETE STUDY

If one makes a complete study of this kind and finds the evidence of gastric ulcer, and perhaps also the evidence of chronic appendicitis, both conditions may be dealt with at the same operation; otherwise the patient cannot be expected to get entirely well until the other abnormal condition has been rectified. So, too, if duodenal ulcer is present, and at the same time one finds a well marked intestinal stasis, one cannot expect complete recovery until the intestinal stasis is also dealt with, as well as the duodenal ulcer. In fact, at times the symptoms of the duodenal ulcer will disappear if the intestinal stasis is thoroughly and competently treated. With reference to the gallbladder, I have seen patients that have traveled all over this country consulting the best stomach specialists because of severe and persistent stomach symptoms, and only stomach symptoms. Yet I have found in them gallstones, the removal of which relieved all gastric symptoms. I have found gallstones by roentgen-ray examination because I had made a complete study, when all the symptoms seem to point toward a urinary rather than a biliary colic, even to the extent that the patient passed a slight amount of microscopic blood in the urine.

Chronic appendicitis, I believe, gives rise to more obscure symptoms in the abdomen than any other condition, and yet gives the most elusive evidence on which to base a diagnosis. If one makes a complete study of the alimentary canal, together with the gallbladder, and at times the urinary tract, spinal column and sacro-iliac region, one can practically always make a diagnosis or find pathology sufficient to account for the abdominal symptoms. I believe that such a complete study thoroughly done by a competent, skilled roentgenologist is of as much, and at times more value than an exploratory abdominal operation. Within a short period of two weeks, there have been sent to me three patients who have had exploratory operations done by competent surgeons because of the symptoms of gastric ulcer, in whom no evidence of gastric ulcer could be palpated by the surgeon, and the abdomen was closed. Within a year these patients were sent to me and in each of these three patients I found the evidence of malignant disease which was confirmed by a subsequent operation.

If such a complete study of the abdomen is made, I believe that carcinoma, if not present, can be eliminated from consideration in the diagnosis, and if present can, I believe, in all instances be diagnosed, or at least pathology suggesting carcinoma will be recognized which will be sufficient for an operation. The exploratory operation will then be for a definite purpose, at a definite location, to investigate a definite lesion, and when roentgen evidence points to carcinoma in the gastro-intestinal tract, the surgeon should be very sure that it is not carcinoma before he ridicules this diagnosis or eliminates it from his consideration.

CONCLUSIONS

1. A complete roentgen study should be made in all obscure abdominal cases.
2. Such a study should determine each organ to be either normal or abnormal, and if abnormal, the nature of this abnormality should be carefully described.
3. The diagnosis of carcinoma, if present, may practically always be made.
4. The absence of carcinoma may, in most instances, be proved.
5. Gastric ulcer may be recognized in about 90 per cent. of the cases.
6. Duodenal ulcer may be recognized in probably 95 per cent. of the cases.
7. Gallstones may be recognized in approximately 50 per cent. Other evidence of gallbladder disease may be obtained in 25 per cent. more.
8. Chronic appendicitis may be diagnosed in practically all instances.
9. Incompetence of the ileocecal valve may be recognized, and diagnosed only by this procedure.
10. Defects, adhesions, filling defect and abnormal function of the bowel may be recognized by this method better at times than by operation.
11. Diverticulitis may be recognized only by this method and by operation.
12. Carcinoma of the rectum may, at times, be more definitely determined as to its position, location and its extent than by a proctoscopic examination.
13. Patients generally obtain a great deal of mental satisfaction that is helpful in the cure of their cases, as the result of a complete study of this kind.

ABSTRACT OF DISCUSSION

DR. BERTRAM W. SIPPY, Chicago: Dr. Pfahler has presented the subject from the standpoint of the roentgenologist. It appeals to two classes, those who, through experience, have been conducting roentgen-ray examinations of the gastro-intestinal tract for diagnosis, and those who are familiar with it only through writings and hearsay. Our duty is not done in obscure cases until we have made a complete examination. The difficuty is, how do we know that a case is obscure? Sometimes it may appear to be obscure when it is not; and mistakes in diagnosis are apt to be made by making only a routine examination. If we are going to diagnose cases properly, we may well refer them to a competent roentgenologist.

The doctor made a very strong plea for complete examination. I wish to supplement that plea by making a plea for complete examination nonroentgenologically. Physicians usually are too narrow in their vision of intestinal troubles, looking at intestinal troubles only with the idea of giving cathartics or enemas. They are confused by intestinal stasis, by disturbance of the ileocecal valve, by Jackson's membrane, by a large amount of rubbish, names that have very little significance. They should know these things are remedial, and that there are not very many diseases or disorders of the stomach for which patients seek relief. If we eliminate cathartics and enemas and rivet attention on the serious possibilities, realizing that by working with a little understanding, there are mighty few cases that cannot be studied without roentgenology and conclusions drawn that will be influenced very little by roentgenology. Having started this work before we had the roentgen ray to help us, we developed a certain technic in our diagnosis of gastro-intestinal disorders, and we make fewer mistakes when we carry that out as accurately as possible than we would otherwise. When one does that, I want to say to you, from long experience, that it is possible to do your work so accurately that it is only now and then that the roentgen ray will give you very material advantage. But we cannot get along without it, because we do not know just what it is going to show. It will show things like these diaphragm hernias that you cannot get in any other way.

DR. WILLIAM VAN VALZAH HAYES, New York: I am disposed to endorse strongly every word Dr. Pfahler said, except one statement, that the only way we can tell if the ileocecal valve is incompetent is by means of the roentgen ray. I do think we can frequently get information about this if we use our hands and ears intelligently.

I wish to emphasize what Dr. Sippy said of the extreme importance of a thorough study of the case by the gastro-enterologist before the roentgenogram is made. I do not think that giving the barium meal, and seeing if the stomach is empty in six hours, is an adequate test of the duration of digestion. The stomach may act differently with different meals, and it is very desirable to make other tests, such as the rice and raisin test and the "duration" test (two soft-boiled eggs, a glass of water and roll), which should be out of the stomach in three and a half hours. The roentgen ray furnishes extremely valuable confirmatory evidence, and sometimes gives an insight into conditions that would be overlooked without it. For example, we have gone over the abdomen carefully, and have concluded that the organs are all in normal position; we have tested the position of the stomach with the patient reclining and have found the greater curvature at the umbilicus, or slightly below, and all seems to be right in that respect. We send the patient to the roentgenologist, and learn of the existence of a very marked gastroptosis. It has been shown that when the patient stood with the meal in the stomach, the stomach dropped down about 4 inches. Some of these patients can be relieved by using a supporting belt or corset. The roentgen ray is particularly valuable in showing the presence or absence of filling defects in the stomach and bowel, and this, perhaps, constitutes its most important aid in gastro-enterologic diagnosis. We should avail ourselves of the skill of the roentgenologist to the greatest practical extent, in order to get a full-rounded diagnosis. If we do, and if we make thorough studies ourselves, we can go forward in confidence, feeling sure we shall know whether there should be an operation or whether we can get results by medical treatment.

Dr. A. Heinen, Chicago: The view of the gentlemen preceding me as to the value of roentgenology in gastro-intestinal disturbances is correct. I always contend that if you depend on the diagnosis of gastro-intestinal disturbance by the roentgenologist, you will make more mistakes than you ever made. The principle in diagnosis of gastro-intestinal disturbance is a thorough physical study of the case and the laboratory findings. In the diagnosis of ulcer of the stomach by the roentgen ray, retention may be due to spasm; but as we are all most concerned by the importance of the diagnosis of carcinoma of the stomach—which means death to the patient—I think that an early diagnosis of carcinoma is of the greatest importance, because you can save the patient's life by the proper surgical procedure. The roentgen ray fails in the early diagnosis. The early diagnosis of carcinoma is made only if you seek for carcinoma. If the roentgen ray shows that carcinoma is there, it is a late diagnosis. In the early diagnosis of carcinoma, I rely on the history, physical examination, and, above all, on the occult blood test of the stool. Carcinoma of the stomach is mostly the medullary form and begins in the mucous membrane; it consists mostly of blood vessels—very little stroma—and as the growth breaks down constantly, blood always is present in the stool. If you find occult blood in the stools for a period of a week, carcinoma is present. The roentgen ray will not show anything in this stage, not until two or three months later, when the patient is doomed.

Dr. J. Guttman, New York: We can all fail once in a while, particularly if we base the diagnosis on one fact. Dr. Pfahler did not intend to convey the impression that we should limit our diagnosis to roentgen ray. He intended to say that it is absolutely necessary to be thorough, whether you do it in a clinical way, or in a chemical way, and when you do it from the roentgenologist standpoint you must be particularly careful to be thorough, because it is the little details which enable you to make a correct diagnosis. Why is the diagnosis more important than anything else. No physician has done his duty to his patient, in spite of any effective treatment he may have instituted in that particular case, unless he knew why he was making the application of this particular therapy. So first and foremost comes the diagnosis. If we can make a diagnosis without the aid of any tests, well and good, but if not, let him resort to chemistry and the roentgen ray. If I were to chose my methods of diagnosis, I would say, give me clinical experience; if my clinical experience teaches me that I am dealing with a gastric ulcer, and the laboratory findings may tell me there is achylia gastrica and other evidences present which might indicate carcinoma, I shall be firm in my diagnosis of gastric ulcer. If clinical experience tells me I am dealing with carcinoma of the stomach, and the roentgen ray will fail to find definite or other evidence, I shall still put my faith in my clinical diagnosis. Often the roentgen ray leads in the proper direction, not always; but the failures are not so much because of the ray itself, but because of the way it has been used. It depends entirely on the man and on the method used, and on the interpretation of the findings. But taking it as a whole, first comes proper clinical diagnosis, then the laboratory work, whether it is chemical or roentgen ray, done in the proper way and by an expert. The time is coming when we will all become expert in roentgen-ray laboratory work, when every man who is considered a gastro-enterologist will not make a diagnosis unless he is a roentgenologist. It is going to be a necessary part, just as much as knowing how to handle a stomach tube. Dr. Pfahler says he finds the appendix very often. I never saw the appendix visualized as frequently in giving the patient the ordinary barium meal or carbohydrate meal as I do when I give him buttermilk. After twelve or fourteen hours, I find the appendix visualized, if it can be visualized.

Dr. Horace W. Soper, St. Louis: Boas, who originated the occult blood test, has always admitted that it was of no value in the early diagnosis of cancer. He states so explicitly, and I think that this has been the general opinion of all men of large experience with the test. It occurs late in the development of the growth. No examination of the gastro-intestinal tract is complete without the roentgen-ray findings; and in the hands of an expert it is our only method of obtaining an early diagnosis in cancer. I think that Dr. Pfahler's percentage figures in relation to ulcer and appendicitis are very conservative.

Dr. George E. Pfahler, Philadelphia: More mistakes in diagnosis are made through carelessness than through ignorance; and that applies whether it be in roentgenology or any other method of diagnosis. It is lack of thoroughness that is generally the cause of the mistakes. The mistakes in the diagnosis of carcinoma of the rectum in the majority of instances are due to the lack of the physician putting his finger into the rectum. The great majority of cases that have gone on for a long time have been neglected because the physician has not introduced his finger into the rectum; and that is only an illustration of the absolute carelessness that is going on all over the country in the matter of diagnosis, and it applies to clinical medicine, and perhaps even more to roentgenology. In regard to the ordinary clinical examination—and the roentgenologic findings are also clinical—I agree with everything Dr. Sippy said, and everything Dr. Hayes said. Of course, we should use every means of diagnosis, and use the roentgen ray also, and you will have that much more thoroughness in the diagnosis. When the diagnosis differs, there is something wrong in the observations some place, and it should be corrected by more thorough study.

With regard to the diagnosis of early carcinoma, I challenge not only Dr. Heinen, but any man, to make a diagnosis of carcinoma—the early diagnosis of cancer of the stomach that I cannot make with the roentgen ray, if the work is done thoroughly. You cannot, however, make such a diagnosis if you are going to depend on technicians, men who are simply paid to work a certain time, and are generally underpaid. In certain cities some hospitals have no physicians in charge of their roentgen-ray department. They depend on the technicians to make their studies, and then commercialize the roentgen-ray department so that they can get the greatest amount of money for the least amount of work out of them. That is the cause of mistakes in diagnosis, and that is what prompted me to write this paper. Patients are sent for a stomach examination at so much per, and then because a mistake is made he comes back and damns the roentgen ray. The patient thinks he has had a roentgen ray examination, but you know he has not. The patient is the one who suffers. Somebody gets some coin that does not belong to them. The only plea I make is, more thoroughness in the roentgen-ray examinations and thoroughness in the clinical diagnosis.

Epidemic Diseases in City and Country.—It is true that epidemics of disease spread with greater rapidity in the cities owing to the fact that the infected person is liable to come in contact with a large number of persons in a short time. But sources of infection are more promptly located, the hospital for contagious diseases is made use of without delay, and the common agencies for the prevention of disease in our cities are not so readily available in the sparsely populated parts of the state. By this I refer to the efficient health organization of the city with its corps of inspectors, laboratory workers, epidemiologists, etc. Added to this is the efficient nursing organization, ever ready to lend timely aid.—Byron U. Richards, M.D., *Bulletin Rhode Island State Board of Health.*

THE DIAGNOSTIC AND PROGNOSTIC VALUE OF BLOOD UREA IN UROLOGY [*]

ALBERT E. GOLDSTEIN, M.D.
Associate in Genito-Urinary Surgery, University of Maryland School of Medicine and College of Physicians and Surgeons; Attending Urologist to Hebrew Hospital
BALTIMORE

In partially reviewing the literature on urology of the past three decades, one's attention is immediately attracted to the advances made on the surgical and diagnostic sides, though the advances of the former depend almost entirely on the latter. That is, as the newer methods in diagnosis of urologic conditions have developed, the urologist has become more competent as a prognostician and therefore was enabled to perform operations that otherwise would not seem feasible. Furthermore, the advances in diagnosis have been principally aided by the more modern laboratory methods of the blood and urine, and one finds himself dependent on the various chemical tests of the blood and urine, together with the action of various dyes on certain organs before a urologic operation is performed.

The work of Koranyi[1] on cryoscopy, of Heidenhain[2] on indigocarmin, of Von Mering[3] with the phlorizin test, of Geraghty and Rountree[4] on phenolsulphonephthalein, and the various contributions to science on the methylene blue test, rosaline test, indigocarmin urine urea and other examinations of urine, etc., are doubtless familiar to all the members of this Association.

The literature up to date is teeming with endless variations of these tests, each having its own followers, each one in itself being applied best to certain classes of cases only, and each one an excretory test. In most institutions, three, four or all the tests were employed, and from the data collected from the combination, conclusions were drawn. In view of the misleading interpretations that followed the use of some of the foregoing methods at various times and in various classes of cases, the importance of retention tests was soon recognized, and in the past few years less stress has been laid on excretory tests and much more stress on some of the retention tests, particularly blood urea, nonprotein nitrogen, creatin and uric acid.

The work by Marshall and Davis[5] on "The Distribution of Urea and its Elimination from the Body," the work by McClean and Sellig[6] on "Urea and Total Nonprotein Nitrogen in Normal Individuals," and that by Folin and Denis[7] on "The Diagnostic Value of Uric Acid Determinations in Blood," have encouraged investigators to seek methods from which more conclusive data could be obtained than by the excretory methods which at all times and in all classes of cases did not correspond. Schwartz and McGill,[8] in their series of 211 cases, have shown conclusively the importance of blood urea, and Tileston and Comfort[9] have demonstrated the relationship of it in health and disease. Gillard[10] employs it with great satisfaction in the diagnosis of surgical diseases of the urinary tract and Scherck and Gradwohl[11] have shown conclusively that no urologic case is completely examined for diagnosis or operation without the employment of a retention test.

My investigations for the past three years have been carried out practically along the same lines as those of Scherck and Gradwohl, the principal retention test employed being that of blood urea. The cases selected for the work were all urologic cases, in the services of Dr. Rytina and myself.

The method employed for determining the blood urea at first was Marshall's[12] (that of using serum), and later Van Slyke's[13] (that of using whole blood) and calculating on the per liter of blood basis with a normal consideration of from 0.3 to 0.6 gm. per liter of blood. The number of cases in my investigations up to the time of writing was 104, on which 280 blood urea determinations were completed.

For purposes of comparison and to demonstrate partially some of the surpassing qualities of blood urea in relation to diagnosis and prognosis in genito-urinary surgery, I have employed the three following tests, which are the most uniformly used and the simplest of application: (1) the urine urea test; (2) the phenolsulphonephthalein test, and (3) the ordinary chemical and microscopic examinations of urine (albumin, casts, etc.).

METHOD OF PROCEDURE

The method of procedure was as follows: When a urologic case was admitted to the hospital, some urine was taken for microscopic and chemical examination. An intravenous injection of phenolsulphonephthalein was given, some blood was taken for a blood urea and whenever possible, a twenty-four hour specimen of urine collected for urine urea determination, either the Hüfner[14] or Marshall[15] method being employed. The patient was not placed on any special diet, except in cases in which possibly there were some constitutional disturbances present. Therefore the intake of proteins was practically constant and did not interfere materially with the relative comparisons of the blood urea, although the patient was advised to drink water copiously. In from three to five days, the same procedure was carried out to determine the course of the case, that is, whether conditions were becoming more or less favorable for the patient and for the surgeon. If the various tests, particularly the blood urea, were within normal limits on the first examination, and the second examination demonstrated an improvement or lack of improvement, I could at this time begin to consider the prognosis of the case, should operation be contemplated. If the blood urea increased in amount, which of course indicated a higher degree of toxicity, operation was delayed and the blood was taken again in from three to five days. This procedure continued until the blood urea reached within the normal limits of from 0.3 to 0.6 gm. urea per liter of blood. In most cases a phenolsulphonephthalein was given at the same time that the blood was taken for urea determination. Should the blood urea, after a number of determinations, not reach the upper normal limits, then when a stationary point was reached and the operation was imperative, it was performed, providing the stationary point was not too far above the upper normal limits. In this manner, I was able from my series of cases to standardize approximately (as one might call it) the minimum and maximum retention of urea that might be present in the blood before operation was performed with impunity. This will become apparent from the study of the accompanying tables. Here it is obviously seen that only rarely did a patient recover from an operation with a blood urea of more than 1 gm. per liter of blood (the prognosis being considered grave here at all times) and at no time was the prognosis grave, urologically speaking, with a blood urea of less than 0.75 gm. As will become apparent from the study of the accompanying tables, in the few cases in which the patients with blood higher than 1 gm. were operated on, it will be readily observed that the patients developed uremia, the prognosis having been made before operation. This development took place in all cases with the exception of certain types, such as some prostatic hypertrophies and strictures of the urethra, in which a cystostomy was imperative for retention, irrespective of the condition of the patient. Then the operation was subsequently completed if conditions permitted, as in Cases 24, 31 and 55, all of which were stricture cases with recoveries following operation. Peculiar as it may seem, patients with a blood urea of more than 1 gm. who were operated on and recovered, appeared not to have as stormy a recovery if the obstruction were a urethral, rather than a renal or prostatic obstruction. Whether this is a mere coincidence or the resisting powers are greater, I am unable to state.

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[*] Read before the Section on Genito-Urinary Diseases at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

[*] Investigations carried out in the Urological Departments of the Mercy and Hebrew Hospitals.

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In cases with a blood urea between 0.75 and 1 gm., in which operation was necessary, only a fair prognosis was made, depending on whether the stationary point reached was a progressive decrease or a progressive increase in the amount of blood urea. This point was determined only by a series of blood urea determinations, best demonstrated in Case 86. This patient is at present in the hospital and has been there for the past three months under the preoperative regimen. His blood urea on admission was 0.55 gm. urea with a phenolsulphonephthalein of 55 per cent., and 10 gm. urine urea daily. Blood urea tests were completed in from five to seven days, with a result that there was a constant variation rising to 0.81 and dropping back to 0.6 and then rising again. In view of other conditions present, this patient would be a surgical risk, unless his blood urea would remain stationary, somewhere below 0.75 gm. or between 0.75 and 1 gm. A point of great interest here is that the blood urea and phenolsulphonephthalein were within normal limits on admission and, should dependence have been placed entirely on the one determination, this patient would unquestionably have developed uremia and died. Hence the importance of a series of blood urea determinations before operation. In only one case in which the patient was operated on and in which a very favorable urologic prognosis was given before the operation, the patient died from a renal insufficiency, that is to say, of a uremia following an acute renal suppression probably due to the

TABLE 1.—COMPARISON OF RESULTS OF BLOOD UREA, PHENOLSULPHONEPHTHALEIN AND URINE UREA TESTS

Case Number	Name	Diagnosis	Blood Urea Gm. per Liter of Blood				Intravenous Phenolsulphonephthalein for Two Half-Hour Collections			Urine Urea Gm. per Diem, Doremus			Urine Examination	Prognosis		Operation	Results	Remarks
			Admission	Preoper. 1st	Preoper. 2d	Postoper.	Admission	Preoper.	Postoper.	Admission	Preoper	Postoper.		Admission	Preoperative 2d			
24	G. C.	Stricture of bulbomembranous urethra, calculus in prostatic urethra	1.04	1.04	0.75	0.6	2%	1%	35%	3	8	14	Albumin +++; pus cells ++; staphylococci	Fair	Good	Cystostomy and external urethrotomy	Improvement	Operation imperative
25	G. K.	Stricture of bulbomembranous urethra	0.96	0.94	....	0.6	10%	...	40%	10	..	16	Albumin ++; few pus cells; colon bacilli	Good	Good	Dilatation	Improvement	
30	H. K.	Stricture of bulbomembranous urethra, uremia	4.1	4.1	*	*	*	*	*	8	8	..	Albumin ++	Grave	Grave	Dilatation	Died	Patient died soon after admission
31	T. Y.	Stricture of bulbomembranous urethra	1.2	1.1	0.4	0.3	5%	5%	40%	2	5	..	Albumin ++; few pus cells; casts; staphylococci	Poor	Good	Cystostomy and external urethrotomy	Cured of stricture	Operation was imperative
55	J. L.	Stricture of bulbomembranous urethra, perforating fistula	1.0	0.9	....	0.7	†	†	†	†	†	†	Albumin +++; casts and few pus cells and organisms	Fair	Fair	External urethrotomy; excision of fistulous tract	Cured	Operation was imperative
71	J. W.	Vesical calculus	0.5	0.5	....	...	5%	5%	....	3	3.5	..	Albumin +++; pus cells ++; and organisms	Good	Good	Perineal section and cystostomy	Died	Demented. Refused nourishment

* None obtained. † Unable to obtain on account of perforating fistula.

administration of ether or some other unknown cause, as no necropsy was obtained.

CASE 1.—The case is worthy of mention. The patient was H. A., a man, aged 60, with a diagnosis of papilloma of the bladder and a moderate benign hypertrophied prostate. His blood urea on admission and previous to operation was 0.33 gm. per liter of blood, the phenolsulphonephthalein test was 45 per cent. for two half hours. The urine examination showed many red and white blood cells. Cystoscopic examination revealed a small papilloma of the bladder and slight intravesical bulging of the prostate. The systolic blood pressure was 145, the diastolic 95, and the heart and lungs normal. In view of the excellent condition of the patient, he was operated on three days after admission. The papilloma with the normal surrounding tissue was excised and a sphincterotomy performed at vesical neck. Two days after operation the patient had the appearance of being toxic, drained only about 250 c.c. in more than twenty-four hours, in spite of forced liquids, infusions, etc., and before blood was taken for a blood urea test the patient died, three days after operation. We were unable to obtain necropsy, but with a preoperative normal blood urea and a suppression following operation, the cause of death seemed *obvious*. I regret very much that I did not have a blood urea test in this case, previous to the patient's death.

TABLE 2.—RELATION OF BLOOD UREA TO URINE ANALYSIS IN OPERATIVE CASES

Case Number	Name	Diagnosis	Blood Urea Gm. per Liter of *Blood*				Intravenous Phenolsulphonephthalein for Two *Half-Hour* Collections			Urine Urea Gm. per Diem, *Doremus*			Urine Examination	Prognosis on Admission	Operation
			Admission	Preoper. 1st	Preoper. 2d	Postoper.	Admission	Preoper.	Postoper.	Admission	Preoper.	Postoper.			
12	D. B.	Benign prostatic hypertrophy	1.7	...	...	...	Trace	....	....	..	..	..	Albumin —, red blood cells —, white blood cells —, *organisms* +	Grave	None
16	T. L.	Benign prostatic hypertrophy	0.78	0.45	0 45	0.41	35%	55%	....	20	..	..	Albumin +, few pus cells	Good	Perineal prostatectomy
18	W. O.	Benign prostatic hypertrophy	0.28	0.3	...	...	75%	....	....	25	..	..	Negative	Good	Suprapubic prostatectomy
5	A. E.	Malignant prostatic hypertrophy	2.6	3.4	...	...	None	None	....	..	..	..	Albumin —, white blood cells or red blood cells, specific gravity 1 002	Grave	No operation
37	M. M.	Benign prostatic hypertrophy	0.68	0.64	...	0.5	*57%*	58%	60%	..	..	..	*Albumin* +. few white blood cells	*Good*	*Suprapubic* prostatectomy
40	B. R.	Benign prostatic hypertrophy	0.6	0.6	...	...	55%	54%	....	18	..	..	Few white blood cells	Good	Suprapubic prostatectomy

Seven other patients that were operated on died after a favorable prognosis was given based on the blood urea determination, but here in all the cases the cause of death was not a renal insufficiency, as will be apparent from the study of the accompanying cases. One died of a pulmonary edema following a perineal prostatectomy, a second of a streptococcus infection following a cystostomy for drainage, a third of a septicemia following a suprapubic prostatectomy, and a fourth of starvation, in which case the patient was of the demented type and, following operation, refused nourishment. A fifth died of pneumonia following a suprapubic cystostomy, a sixth died of pneumonic tuberculosis following a nephrectomy, and a seventh died of pulmonary embolism following a nephrectomy. Certainly a urologist cannot be blamed for the deaths of the foregoing seven patients, as these deaths could have occurred in any other operative cases.

ADVANTAGES OF BLOOD UREA OVER URINE UREA TEST

The advantages of blood urea over urine urea *will* become apparent from the study of Table 1, the principal advantages being as follows:

1. The great variation, which exists in the normal and leads to inaccurate interpretations, on which account it is difficult to determine when one is dealing with a borderline case.
2. The disappointing results produced by the quantitative estimate of this normal urinary constituent, because of the fact that the amount of these substances excreted depends not only on the functional activity of the kidney, but on the amount of these substances carried to the kidney for excretion.
3. The inability to obtain a correct and fairly accurate twenty-four hour specimen of urine.

From a study of a series of tables I have completed, of which only three have been included in this paper for lack of space, it was observed that from the urine urea determinations certain patients would have been considered favorable surgical risks and others unfavorable surgical risks, best demonstrated in some of the cases of the accompanying tables.

CASE 2.—The patient whose case was of particular interest from this standpoint was B. C., a young man, aged *24*, who developed a lobar pneumonia. During his convalescence, a partial suppression of urine set in, and the first four days after I saw him, he voided between *175* c.c. and *300* c.c. of urine in twenty four hours. His blood urea *during* these four days *remained* stationary, that is, from 1.44 to 1.45 gm. per liter of blood. A very grave prognosis was given. An intravenous phenolsulphonephthalein in this case showed only a trace of phenolsulphonephthalein for two, one-half hour collections. His urine urea remained fairly constant during these days, varying from 1.05 to 1.36 gm. per diem. There were albumin, casts, and red blood cells constantly in the urine with a specific gravity ranging from 1.008 to 1.014. Under forced fluid intake, on the fifth day, he excreted 1,250 c.c. of urine with a specific gravity of 1.010, a urine urea of 12.4 gm., and a blood urea of 2 gm. In spite of his increased urine urea, his blood urea increased. *I* gave a very unfavorable prognosis. On the sixth day, his output increased to 3,500 c.c. with a specific gravity of 1.012, a urine urea of 35 gm., a phenolsulphonephthalein of 3 per cent., but a blood urea of 2.7 gm. On the seventh day, the urine urea increased to 38 gm., and the blood urea to 3.2 gm. In spite of the increase in the output of urine and the increase in urine urea, after his blood urea left the stationary point of 1.45 gm., the outcome of the case to me was obvious, and on the eighth day, with an output of 4,000 c.c. of urine with a specific gravity of 1.012, a urine urea of 40 gm. and a blood urea of 3.2 gm., the patient died of a toxic uremia and pyemia. During the last three days, his temperature ran very high with a high leukocyte count, and he had areas of tenderness in several parts of the body.

The discussion of this case is simple. Under the forced intake of fluids, the kidneys began excreting hypernormally, conveying with the excretion only a small quantity of solids; hence the low specific gravity. The liver in this case was unquestionably manufacturing an extra quantity of urea (Van Slyke[16]), which was being partially taken up by the kidney and excreted in the urine; hence the high urine urea. But with the increase in the manufacture of urea by the liver, the kidneys were excreting only part of it and the remainder of it was being stored up in the circulation; hence the increase in the blood urea and toxic condition of the patient. This is one of the types of uremia cases that I believe Foster[17] classifies.

DIFFICULTIES OF PHENOLSULPHONEPHTHALEIN TEST

Every urologist, I am certain, has met with certain types of urologic conditions in which, on account of mechanical impossibilities, it was difficult for phenolsulphonephthalein to give a true status of conditions. This will become apparent from the study of Table 1. Here it is again observed that Cases 24, 25 and 31, from a standpoint of the phenolsulphonephthalein test, would have been poor operative risks, but from the blood urea determinations, operation was deemed advisable and the patients made uneventful recoveries. Vice versa, some cases had high or apparently normal phenolsulphonephthalein, but high blood ureas, and in each case the patient died before operation was undertaken. Fortunately, this has not occurred many times. In this manner many cases have been diagnosed as good operative risks and others diagnosed as poor operative risks, according to the blood urea examinations. When renal surgery is necessary, blood urea in itself is not sufficient. Here it may be employed only as a prognostic agent. For diagnosis, it is absolutely essential to obtain relative renal function, and it is here that I believe the excretory tests, such as phenolsulphonephthalein, indigocarmin and urine area, are indispensable.

TABLE 3.—BLOOD UREAS IN TWO-STAGE PROSTATECTOMIES

Case Number	Name	Diagnosis	Blood Urea Gm. per Liter of Blood				Intravenous Phenolsulphonephthalein for Two Half-Hour Collections			Urine Urea Gm. per Diem, *Doremus*			Urine Examination	Prognosis		Operation	Results	*Remarks*
			Admission	Preoper. 1st	Preoper. 2d	Postoper.	Admission	Preoper.	Postoper.	Admission	Preoper.	Postoper.		Admission	Preoperative 2d			
23	L. M.	Benign prostatic hypertrophy	0.74	0.74	0.41	...	10%	*	*	21	25	..	Albumin +++, few pus cells and organisms	Good	Good	Cystostomy	Died	Developed *streptococcus* infection
7	J. N.	Benign prostatic hypertrophy	0.9	0.9	0.46	0.4	40%	42%	50%	25	28	30	Albumin ++, few pus cells, red blood cells and organisms	Fair	Good	Cystostomy and suprapubic prostatectomy	Cured	
6	J. C.	Benign prostatic hypertrophy	1.2	0.76	0.6	...	32%	20%	....	20	..	..	Albumin +, few pus cells, casts	Grave	Fair	Cystostomy and suprapubic prostatectomy	Died	
2	C. M.	Benign prostatic hypertrophy	0.45	0.34	....	...	Trace	32%	....	..	..	..	Albumin +, red blood cells +, white blood cells +, casts +	....	....	Cystostomy and suprapubic prostatectomy	Cured	
38	G. N.	Benign prostatic hypertrophy	3.5	0.8	3.5	...	None	10%	....	..	10	..	Albumin ++, white blood cells +	Grave	Grave	Cystostomy	Died uremia	Drainage improved condition, but gradually developed uremia
41	A. W.	Benign prostatic hypertrophy Median Bar.	0.61	0.6	....	...	18%	...	....	..	..	..	Albumin ++, white blood cells +	....	....	Punch	Cured	

* Unable to obtain.

The presence or absence of albumin, pus and casts today does not play as important a rôle as it has in the past excepting where a renal or vesical lesion is suspected, and here it is ruled out by cystoscopy and catheterization of ureters, which is very essential. But for the presence of abnormal constituents in patients to be operated on for the prostate urethra, or bladder, I am certain that if other conditions are within normal limits, operation need not necessarily be delayed.

Other tables were completed, but are not to be presented in this paper for lack of space in which the blood urea phenolsulphonephthalein and urine urea practically all agreed, and from which sufficient data could be collected from the combination, enabling the urologist to proceed with the necessary operation with safety. This last class I may say, though, did not include more than 60 per cent. of the cases. In the other 40 per cent. of the cases there were disagreements in results of the tests, so that if phenolsulphonephthalein and urine urea had been depended on entirely, operation would have been performed, and our mortality rate would have been increased, as in most instances the patients developed uremia and died.

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[16] Van Slyke, D. D.: Proc. Soc. Exper. Biol. and Med., 1913-1914, 15, 487.

[17] Foster, N. B.: Uremia, The Journal A. M. A., Sept. 23, 1916, p. 927.

As a prognostic agent in genito-urinary surgery, I consider blood urea to be almost infallible, and from my results deduced in my many investigations, I can readily say that a favorable or unfavorable prognosis may be made, according to the amount of blood urea present at various times, only to be determined by the studying of a series of urea tests of the blood in each case.

TYPES OF OBSTRUCTIONS

In the series of 104 cases, there were eighty patients operated on and twenty-four not operated on. This included all the genito-urinary conditions, but the variations that existed were principally in the following classes of cases: (1) certain types of hypertrophied prostate; (2) large vesical calculi; (3) impassable strictures of the urethra; (4) stones in the ureter; (5) pyelitis; (6) suppression of urine; (7) large vesical neoplasms; (8) strictures of the vesical neck; (9) diverticula of the bladder, and (10) uremia.

A brief survey of the surgical pathology of each of the foregoing conditions will convince the reader that he is dealing with a mechanical obstruction in most cases. Therefore, there should exist a difference between the excretory and the retention tests, accuracy being detailed to the retention test, principally for the reason that the entire excretory function, be it phenolsulphonephthalein or urine, cannot be collected entirely through the medium of voiding or catheterization. In some cases, this is true of hypertrophied prostates, when some urine is retained in the bladder that the catheter does not remove, principally when there is a large median lobe, therefore the calculation is inaccurate; hence the reason for the wide discrepancy between this and the retention test. In large vesical calculi, large vesical neoplasms, and in some cases of diverticula of the bladder, the same condition exists; not all the urine can be collected, therefore, all the phenolsulphonephthalein is not collected. Here is a case of particular interest:

Case 3.—H. W., aged 54, was admitted to the Mercy Hospital from a neurologic sanatorium to have a perineal prostatectomy done. The urethra of the patient was very sensitive, and in addition to his being demented, he refused a complete examination, allowing only a rectal examination. A large hard mass was felt which at the time was considered to be prostatic tissue. The urine examination revealed a normal specific gravity, a low twenty-four hour urine urea, a phenolsulphonephthalein test of only 5 per cent. for two half hour collections and a blood urea of 0.5 gm. In spite of the low phenolsulphonephthalein, a perineal prostatectomy was decided on. In fact the patient insisted on an operation through the perineal route. After the patient was anesthetized and a sound passed into the bladder, a definite click of a calculus was obtained. The urethra was opened through the perineum, the finger was inserted into the bladder, and a very large calculus was felt. On account of its large size, it could not be delivered through the urethra, and a suprapubic cystotomy was necessary. A stone weighing 9 ounces was removed. The patient did nicely for several days after the operation, but beginning on the fifth day following the operation, he refused to take nourishment. We forced feeding through tubes both rectally and by mouth, but in spite of all this, he died on the twelfth day following operation. His blood urea before death was 0.5 gm., the same as before the operation. There is practically no discussion to this case, excepting that the phenolsulphonephthalein was low, due to the inability to collect all the urine which contained the phenolsulphonephthalein and not because it was not excreted.

In the cases of impassable strictures of the urethra and strictures of the vesical neck, here again all the urine is not voided or collected through a catheter, and again the phenolsulphonephthalein reading becomes inaccurate from the standpoint of dependability. In all the foregoing types of cases that I have mentioned, the phenolsulphonephthalein, probably in a large number of cases, was excreted, but not collected, the fault lying not in the excretion of the drug, but in the collection of it on account of the obstruction. Likewise, in the case of stones in the ureter, the kidney on the involved side is excreting the phenolsulphonephthalein, but on account of the obstruction all the urine is not passing by the calculus; hence inaccurate results again. In the cases of pyelitis, a different picture presents itself. Invariably, if not in all cases of pyelitis, we have an accompanying dilated pelvis which may have a capacity of from 10 to 200 c.c. Here again, if there has not been total destruction of the kidney, the urine or dyes, whatever they may be, are being excreted, but unless a ureteral catheter is inserted to withdraw the retained urine in the pelvis, accuracy cannot be obtained. This is best conveyed to the mind of the reader by the following case:

Case 4 (No. 63).—B. C., aged 24, was admitted to Mercy Hospital with a complaint of urinary frequency. The urine examination revealed a very large quantity of albumin, pus cells, a few red blood cells, colon bacilli and staphylococci; a combined phenolsulphonephthalein of 26 per cent. was obtained for two half hour collections. The patient was cystoscoped, her ureters were catheterized, and many pus cells, colon bacilli and staphylococci were obtained from both sides. The pelvic capacity of each kidney was between 75 and 80 c.c. Both kidneys functioned with a continuous drop suggesting a hydronephrosis. The blood urea at this time was 0.6 gm. per liter of blood. The diagnosis of bilateral pyelitis of pregnancy was made. The pelvis of each kidney was irrigated with a 1 per cent. solution of silver nitrate. This procedure was carried out once a week for six treatments, and at the end of this time, the patient felt very much improved. A relative phenolsulphonephthalein test was obtained giving 35 per cent. output from the right kidney and 11 per cent. output from the left kidney, a total of 46 per cent. The blood urea at this time was 0.37 gm., showing a marked improvement. She left the hospital, returning for treatments. Two months later the patient was admitted to the hospital to be delivered. A combined phenolsulphonephthalein test gave only 21 per cent output. A blood urea at this time was 0.48 gm. per liter. One week later the patient was delivered and made an uneventful recovery.

In discussing this case, it is obvious that with existing bilateral hydronephrosis, some of the urine was retained in the pelvis of each kidney, this being demonstrated at the time of each pelvic lavage. Keeping this point in mind together with the fact that when a relative phenolsulphonephthalein was given and collected by catheterization of the ureters, we find that an output of 46 per cent. was obtained. At the time of the patient's delivery her blood urea as stated was 0.48 gm., which is within normal limits, while her phenolsulphonephthalein was only 21 per cent., which is below the normal. This is undoubtedly due to the retention of phenolsulphonephthalein in the pelvis of each kidney, as a previous phenolsulphonephthalein of 46 per cent. was obtained after its injection and collection by catheterization of the ureters. On both occasions, the blood urea was well within the normal limits.

The blood picture in all cases of pyelitis varies from the information obtained from phenolsulphonephthalein. The dye or urine for the hour or two of calculation is being excreted by the kidneys according to the extent of the lesion, but is partly retained in the pelvis of the kidney. The decrease of the output of phenolsulphonephthalein in these cases always exceeds in proportion the increase in the retention of urea. The only explanation that can be offered here is the theory of retention in the pelvis. In suppression of urine and its subsequent condition of uremia, we have two conditions which may be recognized sooner by a series of blood urea determinations than by any other test, simply on account of its being a retention test. On several occasions, an oncoming uremia was diagnosed in this way long before the information was obtained by the excretory tests.

As the cause of death in a large percentage of patients operated on for urologic condition is uremia, it is of utmost importance to the urologist and surgeon to diagnose this condition before the operation, thereby lowering materially his percentage of mortality; and it is here that blood urea excels all other tests as diagnostic and prognostic agents if the method that I have employed is carried out and one remains within the boundary line of maximum retention of blood urea.

It has not been my intention in this paper to lead one to believe that I have discarded the use of other tests for diagnosis and prognosis, because I have clearly demonstrated in the paper that there are certain conditions that befall the genito-urinary tract, under which the other tests must be employed in addition to blood urea, to determine the true status of conditions. From the foregoing information I have been able to draw the following conclusions:

CONCLUSIONS

1. In blood urea we have a valuable retention test to be used in the diagnosis and prognosis of urologic cases.
2. It may be employed in all urologic cases without any special limits.
3. Blood urea as a prognostic agent in urology is practically infallible, if employed by the method I have described.
4. It is a simple procedure and may be used to advantage when the excretory tests such as phenolsulphonephthalein, urine urea, etc., cannot give the desired information.
5. When relative kidney function is desired, it should be used in conjunction with the excretory tests.
6. In a case with a blood urea of more than 1 gm. per liter of blood, the prognosis should be considered grave, and less than 0.75 gm. as good.
7. An oncoming uremia may be diagnosed long before the clinical signs make their appearance, and before the excretory tests can give the information.
8. Its employment will materially decrease the percentage of mortality held against the urologist or general surgeon.

330 North Charles Street.

Anesthetic Preferable in Shock.—Nitrous oxid and oxygen is the anesthetic of choice of men who have suffered from shock or serious hemorrhage.—*Review of War Surgery and Medicine.*

THE INFLUENZA EPIDEMIC IN CHICAGO

THE DISEASE AS A TYPE OF TOXEMIC SHOCK

ROBERT W. KEETON, M.S., M.D.
Instructor, Department of Pharmacology and Therapeutics, University of Illinois College of Medicine; House Physician, Cook County Hospital
AND
A. BEULAH CUSHMAN, M.D.
Instructor, Department of Ophthalmology, University of Illinois College of Medicine; Resident Physician, Cook County Hospital
CHICAGO

The following report is based on the cases of influenza admitted to Cook County Hospital, and on personal observations and experience in their treatment. We believe a careful statistical report of those cases is valuable for two reasons: First, it will serve to correct and amplify many opinions and conclusions which physicians dealing with a more limited set of cases have formed; second, it will aid in understanding some pre-epidemic obscure cases. For about eighteen months the term "atypical pneumonia" has been frequently used to designate cases which did not conform to textbook descriptions, but which have been increasing in numbers. Some of these cases made their appearance in the hospital over one year ago, and in the spring of 1918 constituted many of the so-called lobar pneumonias. They were admitted to the hospital and discharged under varying diagnoses, as bronchopneumonia, capillary bronchitis and epidemic mixed infections. We now know we have just passed through a period in which those more or less sporadic and obscure cases have grown into epidemic proportions.

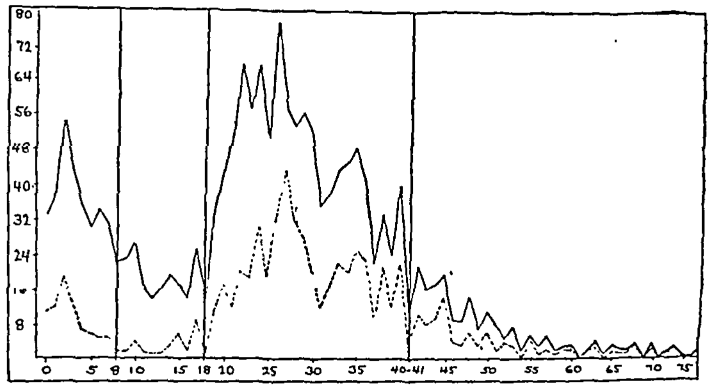

Chart 1.—Admissions and deaths with reference to age: solid line, admissions; broken line, deaths.

Two previous reports have appeared from the Cook County Hospital, one[1] dealing with the etiology and pathology primarily, and another[2] with one of the complicating factors (pregnancy). The present work is based on a study of 1,735 completed records in which the patients have been discharged, either through death or recovery. These were drawn from all ages and included males and females living under conditions reproduced in all large cities throughout the country. From an epidemiologic point of view, the statistics should furnish valuable supplemental data to those being reported from the Army camps.

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[1] Nuzum, J. W.; Pilot, Isadore; Stangl, F. H., and Bonar, B. E.: Pandemic Influenza and Pneumonia in a Large Civil Hospital, The Journal A. M. A., Nov. 9, 1918, p. 1562.

[2] Woolston, W. J., and Conley, D. O.: Epidemic Pneumonia (Spanish Influenza) in Pregnancy, The Journal A. M. A., Dec. 7, 1918, p. 1898.

ADMISSIONS

Because of the epidemic nature of the disease and the rather limited hospital facilities, instructions were issued to the county and examining physicians to accept for the hospital only patients that were really ill. Under such a working rule the final hospital diagnosis showed the distribution of cases to be 38.2 per cent. of influenza with or without bronchitis, and 61.8 per cent. of bronchopneumonia.

Age as influencing the incidence is shown by Chart 1, and it will be noted that the density of admission falls into two groups, one terminating with the eighth year, and the other lying between the eighteenth and fortieth years.

According to sex, the percentage of males was 59.2, and of females, 40.8.

This is rather interesting from an epidemiologic point of view. The male population was much reduced by the Army drafts. The floating population that frequents the saloon and cheap lodging house and is subjected to untoward conditions of life had been largely eliminated by the "work or fight" ruling.

The females did not remain at home in greater proportions, because the prostration of the class of cases accepted was such that they would have been a burden on the family, rather than an aid. It is safe to conclude, therefore, that males were affected in larger numbers than females. This may mean that because of their more frequent contact with each other in crowded streets and cars, the opportunity for infection was greater in the male than in the female.

MORTALITY

The total mortality reported by Nuzum and his collaborators[1] was 31 per cent. This was figured on the basis of the receiving office records of admissions, and the deaths for the corresponding number of days. Our data, taken from completed records of discharged cases, shows the slightly higher figures of 39.3 per cent.

Age.—Reference to Chart 1 again shows a close similarity between the number of admissions and deaths. From a casual glance one might conclude that this was the only factor concerned. The density of admissions falls into four groups as shown by the vertical lines bounded by 8, 18 and 41 years. The death rate for each of these groups was: to 8 years, 26.6 per cent.; from 8 to 18 years, 18.5; from 18 to 41 years, 44.7, and above 41 years, 52.7 per cent.

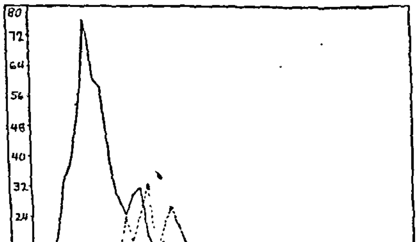

Chart 2.—Duration of bronchopneumonia from onset until discharge from the hospital by recovery, or until death: solid line, deaths from bronchopneumonia; broken line, recoveries.

In the light of the frequent comment that the children and old people stand the influenza much better than adults, it will be noted that old age is not a period of good, but of poor prognosis, while the lower mortality of youth is confined primarily to the years between 8 and 18.

Sex.—In the series studied, the deaths of males were 38.9 per cent., and of females, 40 per cent.

Attention has been called by Woolston and Conley[2] to the unfavorable effect of pregnancy on the prognosis. Since their data include approximately 100 pregnant women, it would seem that a female suffering from influenza uncomplicated by pregnancy has a chance of recovery equal to that of a male.

DURATION OF DISEASE

When a physician has exhausted all the means of physical diagnosis in attempting to judge the prognosis of a case, he finally consults the chart for the duration of the disease, before offering an opinion as to the ultimate outcome. With this idea in mind, the durations of sickness in both influenza and bronchopneumonia have been studied.

In bronchopneumonia, death (Chart 2) occurs as early as the third day. The maximum number is on the eighth day, from which point the decrease is rapid, until the sixteenth day. The level then gradually sinks to the twenty-eighth day.

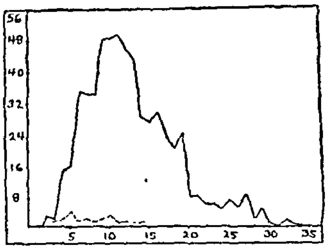

Chart 3.—Duration of influenza from onset until discharge from the hospital by recovery, or until death: solid line, influenza recoveries; broken line, deaths.

Recoveries began on the fourth day and lasted through thirty-three days, with the peak of the curve on the sixteenth day, and a maximum extending from the eleventh to the twenty-fourth day.

Deaths from influenza (Chart 3) were due frequently to an attack terminating a chronic process (as myocarditis, emphysema or cirrhosis of the liver) or developing in the course of pregnancy. Their number is too small to be significant.

Recoveries from influenza begin on the third day, the maximum period ending on the twentieth day, with the high point of the curve on the thirteenth day.

A period of further morbidity of from seven to fourteen days must be added before the patient was fit to resume his daily routine. It is safe to say that the economic loss in these severe cases amounted to from three to six weeks.

In a person ill with bronchopneumonia, the chances of recovery computed in terms of days of duration may be thus expressed: from four to eight days, 7 per cent.; eleven days, 19; fifteen days, 45; twenty days, 70 per cent.

DURATION IN THE HOSPITAL

The duration of the patient in the hospital before death is shown in Chart 4. The high percentage of deaths within from twenty-four to seventy-two hours after entrance indicates that their condition was already hopeless before entrance. Unquestionably the strain, discomfort and exposure associated with the transfer of many cases to the hospital not only reduced their chances of living, but hastened the impending end.

CLINICAL PICTURE

In examining the histories, we hoped first to establish those features of primary and secondary constancy, and finally those less frequent but still of great academic interest, in showing the protean manifestations of the disease.

The primarily constant features were asthenia amounting usually to prostration; headache; muscle pains chiefly located in the sacral region or the extremities, and cough or other evidences or respiratory irritation.

Those of secondary constancy were hemorrhages of some form: epistaxis, hemoptysis, which at times amounted to a pulmonary hemorrhage; bleeding from the gums; hematemesis; menorrhagia; metorrhagia, and hematuria; sore throat, not always a definite soreness, more frequently a dryness and irritation in the nose and throat, which presented on examination a dry, glairy, beefy red color; hoarseness; nasal discharge in infants; nausea and vomiting; cyanosis in adults, and pallor in children.

Less frequently there occurred pleuritic pain at the onset; abdominal pain; diarrhea; urinary retention; erythemas of various types, and deafness.

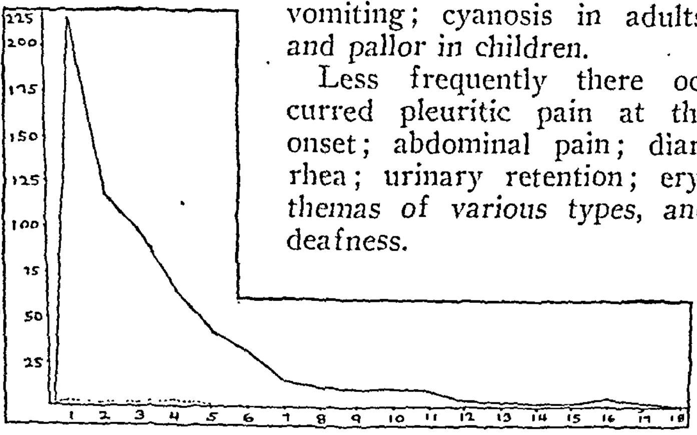

Chart 4.—Daily distribution of deaths with reference to the length of time in the hospital: solid line, bronchopneumonia; broken line, influenza.

The spleen was reported enlarged in only a very few cases. This may have been due to faulty observations, but we are inclined to think it a rather inconstant feature.

The onset was usually insidious, as outlined above. Less frequently it was so stormy that the patient could present with exact accuracy the details of its progress.

Blood Counts.—The exact relation of leukopenia to the disease is not clear in the textbooks. The physician busy with his daily practice has no data from which to formulate an expression of opinion. Our records showed 688 counts, of which an appreciable number were on the same patient on succeeding days. They were studied with reference to the duration of the disease, diagnosis of the cases, and the ultimate outcome as to life or death. The results are to be found in the accompanying table. The counts were tabulated for the day of sickness, and the percentages were computed from the number of counts on this day. The normal count was placed at from 7,000 to 9,000.

Influenza has a high (46.6) percentage of leukopenia in the early stages. With improvement, 24.3 per cent. of the counts were raised into a leukocytosis. During the whole period, more than half (62.2 per cent.) maintained a leukocytosis. The ranges of this leukocytosis lay between 9,000 and 15,000. Such an increase in the white count must be regarded as a favorable sign.

Bronchopneumonia.—In patients dying, the early counts (four days) showed a 50.1 per cent. leukopenia. If now the total counts in the normal and leukopenia column are contrasted in those recovering (53.7 per cent.) and those dying (65.4 per cent.), it will be seen that a balance of 11.7 per cent. exists in favor of the recoveries. Despite the occurrence of death, 22.3 per cent. of the counts were raised from a leukopenia or normal into a leukocytosis. The total average for the period showed no significant result. The lowest count was 900.

In patients recovering, the evident tendency to leukocytosis is shown throughout the course. This fact is more clearly seen when the succeeding counts are examined. The range of leukocytosis was found to be somewhat higher in this class of cases (from 15,000 to 20,000).

It may be concluded that even in the early stages of bronchopneumonia, a leukopenia points to a bad prognosis, and a maintenance of a low count cannot be looked on as other than a very serious symptom. In a few instances a drop was actually noted in the count on the day preceding death. This raises the question of the mechanism of the leukopenia. If it is a toxin that is stimulating negatively the hematopoietic organs, then the leukopenia in the milder cases may be taken to mean a persistence of unneutralized toxins. Crile[3] has called attention to a leukopenia as a diagnostic point in surgical shock. On such a basis, leukopenia developing terminally may be an expression of the more profound toxemic shock into which the patient is sinking.

Blood Pressure.—The blood pressures were taken in selected cases, one group presenting cyanosis with and without pulmonary edema, and another group with a high temperature presenting profound toxemia, but with no evidence of cardiovascular break.

Cyanosis is not an evidence of low blood pressure and does not bear any constant relation to it. Thus systolic pressures of 70, 85, 98 and 98 were recorded in patients who had no cyanosis. Even in the presence of pulmonary edema the pressure may be well maintained. Our records show pressures below 100 in sixteen cases, the majority of these being in the nineties; between 110 and 100 in eight cases, and above 110 in thirty-three cases. In fact, one is again impressed that a patient may maintain an apparently efficient blood pressure in the presence of a definite toxemic shock or at least on the verge of such condition, and that the blood pressure is of little value in determining the breaking point of the cardiovascular system.

BLOOD COUNTS

Duration	Leukocytosis	Normal	Leukopenia
Influenza, recoveries:			
Preceding maximum recoveries 5 days..	28.7	24.7	46.6
Maximum recovery period 6 to 18 days..	41.1	29.3	29.6
Total period	37.5	32.4	30.1
Bronchopneumonia, recoveries:			
Preceding maximum recoveries 6 days..	46.3	24.4	29.3
Maximum recoveries 7 to 18 days........	70.6	11.3	18.1
Total for 18 days................	62.2	16.1	21.6
Bronchopneumonia, deaths:			
Preceding maximum death period 4 days..	34.6	15.3	50.1
Maximum death period 5 to 18 days......	56.9	8.2	34.9
Total for 18 days................	41.3	13.5	45.2

COMPLICATIONS

We shall enumerate rather briefly some complications encountered, and speak in detail of one of the more unusual findings.

Bronchopneumonia.—This may be considered as either the subject under discussion or its most important complication. The fact that these pneumonic areas were at the onset usually centrally located explains the absence of pleuritic pain in the early stages of the disease. It was not until an extension of the consolidation involved the pleura that either pain or an effusion developed. The rather constant finding of fluid as reported by Nuzum and collaborators[1] in those patients dying early is simply an expression of the rapidity of the process. In our series, only twenty cases of pleuritic effusions were diagnosed and confirmed by paracentesis. Five of these patients later developed pus, and one a pyopneumothorax. In six other patients now convalescent, a diagnosis of thickened pleura has been verified by the fluoroscope and plates. It would seem, then, that the great majority run their courses without having the pneumonic process so situated as to involve the pleura.

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[3] Crile, G. W.: Hemorrhage and Transfusion, New York, 1909, p. 75.

Otitis Media.—This, the next most frequent complication, occurred in eighty cases.

Mastoiditis.—Three cases developed, one of which was associated with facial nerve paralysis terminating fatally. Two patients recovered.

Parotitis.—There were six cases, suppuration developing in one.

Meningismus.—Nineteen cases presented all the signs of meningeal irritation. The spinal fluid was negative except for the increased pressure.

Meningitis.—There was one case in which gram-positive cocci were present in the fluid. The patient died.

Ulcerative Stomatitis.—There was one case with death.

Cervical Adenitis.—There were two cases.

Peritonsillar Abscess, Disease of the Antrum, and Osteomyelitis of the Femur.—Of each of these there was one case.

Surgical Emphysema.—There was one case involving the neck tissues of undetermined etiology.

Diseases of the Heart.—Myocarditis with decompensation and recovery occurred in only one case. The unfavorable effect of the disease on previously established heart lesions was to be expected. Of twenty such patients, only three who were suffering from a mild influenza recovered.

Superficial Infections.—Small abscesses involving scalp, nose, axilla and sacral regions were noted. A tendency to development of bedsores was evident. The tip of the ear sloughed off following a puncture for a blood count in one case.

Psychoses.—The exact data involving the number of postinfluenzal psychoses from our series of cases is not available. Dr. F. M. Fowler states that there were thirty-three admissions to female wards of the psychopathic division of the hospital; the onset was from three to five days after an apparently established convalescence from a bronchopneumonia; the mortality was 15 per cent., and the duration was from twelve to fifteen days.

Acute Laryngeal Obstruction.—Of this there were six cases, in patients aged, respectively, 1 year, and 1½, 2, 4, 6 and 50 years. The condition developed in four cases at the height of the disease, in one case in convalescence, and in one case ten days after discharge. The symptoms were those of a typical obstruction: cyanosis, laryngeal stridor, retraction of the episternal notch and xiphoid process; and nonproductive and irritative cough, immediately relieved by intubation. Cultures from the throats, and intubation tubes were negative for diphtheria. Antitoxin was given in two of the first cases. Tracheotomy had to be performed eventually in all of the cases. From the tubes, large amounts of pus and serosanguineous mucus was obtained. Pathologic examination revealed an intense tracheobronchitis extending upward, involving the larynx with consequent edema. Death resulted in from eight to seventy-two hours in five of the cases. One patient survived and is still in the hospital.

DIAGNOSTIC DIFFICULTIES

Since the influenza cases were entered and handled through the contagious branch of the hospital, the problem of an accurate diagnosis carried with it a greater element of urgency than in most medical cases.

At the onset, typhoid was diagnosed in three cases that later proved to be influenza. Another case was seen by several of the attending men, who were divided in their opinions between miliary tuberculosis and influenza. Roentgenograms favored influenza. The outcome with recovery and the development of a complicating antrum established the diagnosis.

In fifteen cases these questions arose: Is it a pulmonary tuberculosis, on which an influenzal infection has been grafted? Is it a pneumonic phthisis? Is it a rapidly advancing tuberculosis without appreciable consolidations? In one of these fifteen cases the patient, a lad of 17 years, entered the hospital with a syndrome that made a diagnosis impossible. Roentgenograms of the chest furnished no conclusive evidence. Two blood cultures were positive for a staphylococcus. Improvement followed for a while; then a reappearance of the symptoms occurred. At this time the chest plates showed an unmistakable miliary tuberculosis. Meningitis terminated the course. Evidently an influenza had lighted up a healed or latent tuberculosis.

Lobar pneumonia was still being handled in the medical wards of the general hospital. Under what conditions were cases to be continued in medical wards as lobar pneumonia? With consolidation evident and a leukocytosis present, all cases presenting a history of sudden onset with chill and pleuritic pain were retained in medical wards as lobar pneumonia. The nasal discharge in the children resembled nasal diphtheria, while the erythemas were quite suggestive of scarlet fever.

Theoretically, pertussis in children and smallpox in adults before the appearance of skin eruptions might be mistaken for influenza.

TREATMENT

Before one can satisfy oneself that therapy is directed along rational lines, one must appreciate the mechanism of the perversion of the physiologic processes. Every one appreciated that in those dying, failure to continue life must be attributed to the exhaustion of the cardiovascular system. The cyanosis, the pulmonary edema, the weak second pulmonic sound, the enlarged, tender liver, increasing dyspnea, and the low blood pressure in certain cases were all evidence that the toxins were destroying the one vital function, the circulation.

During the past four years under the guidance of the Medical Research Committee of this country and Great Britain, the phenomena of shock have been clarified. The views as to its nature and the literature are completely given in two readily available articles by the

British Medical Research Committee[4] and by Cannon.[5] Briefly, shock may be precipitated by three classes of agents: surgery, trauma and toxins; but minor variations may exist in the picture, depending on the etiologic agent. Cannon speaks of shock as an "exemia." The blood pressure is a resultant of heart action, vasomotor control and blood volume. That the first two factors are not at fault has been abundantly demonstrated. The evidence for this view is stated by Mann.[6] That the blood volume factor is the important thing in surgical and traumatic shock has been shown by Cannon, and more recently by Mann.[7] Guthrie,[8] in studying one form of surgical shock, induced by excessive stimulation of nerves, was unable to confirm the results of other investigations that the quantity of blood fluid is reduced in the capillaries. On the contrary, he found some evidence of entrance of liquid into the blood. The rather difficult task experienced by other workers in inducing shock by this procedure raises the question of its identity as compared to that induced by other methods. Some difference of opinion exists as to whether this loss of blood from the available circulation is due to its accumulation in the veins or whether it has been lost by outflow into the tissues and lymph spaces through the capillary walls. The latter is the more probable view.

Dale and Laidlow[4] produced shock by the use of histamin, which is the amin of histidin, one of the building stones of the protein molecule. The conversion of amino-acids into amins is distinctly a type of bacterial activity, and can be reproduced in vitro. We may regard, therefore, that the toxins at work are akin in their activities to histamin. It was shown that at the low point of the blood pressure practically 50 per cent. of the blood plasma had been lost in the capillary region. The secondary results of this are slowing of the blood stream through the increased viscosity, and poor oxygenation of the tissues. Poor oxygenation of the tissues terminates in a condition of acidosis, through the accumulation of intermediate split products. The acidosis affects unfavorably the permeability of the capillary walls. The situation, then, is transudation of the plasma under the influence of the bacterial toxins, slowing of the blood, greater tax on the heart and vascular system, poor oxygenation, acidosis, more transudation, and so on ad infinitum.

Granted a severe infection, the problems of treatment are the prevention as far as possible of the shock state, and the treatment of the established state.

The one element in prevention that lends itself to ready therapeutic application is a dilution of the toxins. Those patients who were evidently prostrated, but were not in a shock state, and in whom sufficient nursing care was available, showed improvement, when fluids, in maximal quantities, were given. These were given by mouth, discontinuous rectal administration by the drip method, and hypodermoclysis. The rationale of the use of the alkalis had not appealed to us; so while we used them in this stage, we believe that the concentrations used were too small to show results. When shock developed, treatment was of little or no avail, but we wish to record certain measures which we feel may be of distinct harm.

Venesection.—In the cyanotic cases, some of the attending men believed that a venesection should be performed, followed by hypodermoclysis. This was advocated with the idea that a certain amount of toxin would be mechanically removed, and that probably relief might be furnished to the heart; so the parting word of advice given by them was to go carefully on the amount of fluids returned to the body. Theoretically the method should be valuable in removing some of the toxins; but instead of relieving the heart, it was only adding to its burden. For the heart was failing not because of excessive peripheral resistance but because there was not enough blood on which it might contract and maintain its coronary circulation. Venesection was performed in fourteen cases. Thirteen of the patients died, and the fourteenth is now suffering from a rather serious psychosis. One died during the operation, and in at least three others the condition was so changed that death occurred in an hour's time. This is exactly in line with the experience reported by those dealing with surgical shock, that even a small hemorrhage reduces the patient's chances of recovery.

Administration of fluids in this stage is difficult. By intravenous injection and hypodermoclysis the fluid may be introduced into the circulation, but it leaks out immediately through the capillaries. Rectal absorption fails in many cases. The water is expelled or distends the patient, adding to his difficulties.

Glucose Administration.—A series of cases has been reported by Litchfield[10] in which the patients were treated by intravenous injections of hypertonic glucose solution. In this work an occasional reaction was reported in which high temperatures with chill occurred. We gave a 10 per cent. glucose solution in two cases, and in each the temperature rose from a level which was only moderate to 107, and death followed in five hours. We were rather discouraged, for frankly at the time that the solution was given to one patient we felt that she had a chance of recovery by the more conservative methods of treatment. That such injections, even when practiced in a number of cases sufficiently large to rule out these so-called accidents, may be harmful is indicated by the findings of Mann[7] in a recent piece of work. He produced shock by tying off the venous return from the leg of an animal and allowing the arterial supply to remain intact. The animals went into shock after varying periods. If, now the ligatures were removed, the shock deepened instead of improving, his interpretation was that in the period of ischemia there had been formed certain products which, when thrown back into the circulation, were contributory factors in maintaining the shock. It is just possible that the glucose may wash into the efficient circulation a sufficient dose of toxic matabolites to act very injuriously.

Digitalis and atropin seemed to be the most efficient of the drugs used. The indications for digitalis would seem to lie in its action on the heart and in its power of transferring the blood from the venous to the arterial side.

Atropin relieved many patients of their cyanosis, and, we believed, increased the chances of recovery in those patients in whom it was used. The beneficial effect of atropin in large doses as shown in the epidemic at Great Lakes Naval Training Station has been reported by Ridge.[11] The only suggestion we have for its apparent value over pituitary solution lies in the well known experiment of Auer[12] in which he showed that atropin prevents death in guinea-pigs subjected to an anaphylactic shock by preventing the stenosis of the bronchioles. The cyanosis may be due to moderate narrowing of the bronchioles already filled with mucous secretion. That it is of value in beginning pulmonary edema is a matter of clinical experience. If it has an action on the permeability of the capillaries of the lungs, stopping the outward flow of fluid from the blood, it is no great stretch of analogy to transfer the same line of reasoning to all of the tissue capillaries of the body. Hence, it may be regarded as a drug that is acting at the site in which the perversion of the physiologic processes is occurring. In grosser terminology, it might be said to have more or less "specific" action in this class of cases.

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[4] Memorandum, British Medical Research Committee, Brit. Med. Jour., March 24, 1917.

[5] Cannon, W. B.: A Consideration of the Nature of Wound Shock, The Journal A. M. A., March 2, 1918, p. 611.

[6] Mann, F. C.: Bull. Johns Hopkins Hosp., 1914, **25**, 205.

[7] Mann, F. C.: Am. Jour. Physiol., 1918, **47**, 231.

[8] Guthrie, C. C.: The Blood in Shock, Arch. Int. Med., July, 1918, p. 1.

[10] Litchfield, Lawrence: Glucose Intravenously as a Therapeutic Measeure, The Journal A. M. A., Aug. 17, 1918, p. 503.

CONCLUSIONS

1. The blood count early in influenza may show a leukopenia or normal count in over 50 per cent. of the cases, but with recovery this is changed to a leukosytosis of from 9,000 to 15,000.

2. The blood count in bronchopneumonia, in those recovering, shows early a very transient period of leukopenia; in those dying, a much higher percentage of leukopenias is found and a greater tendency to its persistence. A normal count or a leukocytosis may be changed to a terminal leukopenia in fatal cases. The range of leukocytosis lies between 15,000 and 20,000.

3. The blood pressure is no index of the state of the cardiovascular mechanism. Cyanosis bears no constant relation to blood pressure.

4. In the acute cases the patients are really suffering from a toxemic shock.

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[11] Ridge: Bull. Chicago Med. Soc., Oct. 12, 1918, p. 20.
[12] Auer: Am. Jour. Physiol., 1910, **26**, 439.

Health in City and Country.—Commenting on and attempting to give reasons for the somewhat better showing of city men over country men in the recent military draft examinations, Dr. L. D. Bristol, state health commissioner of Maine, in an address before the Massachusetts School for Health Officers (May, 1918) thus summarizes the essentials of public health administration in rural districts: (1) a thorough study of rural sociology in general; (2) a special study of rural sociology based on the economic interests of the state in question; (3) public health education in rural districts leading to a definite demand for, and financial support of, an adequate local health organization; such education should be carried on by (*a*) the state department of health; (*b*) the rural schools; (*c*) the agricultural colleges. The latter should give required courses in hygiene and public health under the direction of thoroughly competent sanitarians, and should educate the rural population through extension courses in order to develop rural public health leadership. (4) As soon as possible, the establishment of health unions made up of two or more towns, for the employment of union health officers and nurses, who, in some manner, should be responsible to the state health organization. Towns or cities over a certain population which desire to employ their own full-time health officer should be exempt from the union plan. (5) The extension of all laboratory facilities for the state department of health so that through branch laboratories the rural districts might have close at hand all of the advantages of modern diagnostic and prophylactic methods. (6) Extension of federal and state financial aid until such time as the local rural community can assume the entire financial responsibility.—*Bulletin of the State Department of Health of Maine.*

POSTCILIARY SCLERAL TREPHINING FOR ACUTE GLAUCOMA *

A. E. EWING, M.D.
ST. LOUIS

As the several procedures in the case reported below have resulted in a blind eye, the material is offered only as a study in the intricate problem of glaucoma.

REPORT OF CASE

A healthy unmarried woman, aged 57, during the course of a stye two weeks before I saw her, noticed that her right pupil was large and that the vision was not so good as formerly. Since then she had been using physostigmin (eserin), prescribed by a physician, without relief.

July 18, 1917, in the left eye the tension as determined by the Schiötz tonometer was 20, and the vision $^{20}/_{20}$ with correction 1.75 spheric. There was a large, old retinochoroidal atrophic spot in the lower nasal portion of the fundus. The field was normal. In the right eye the tension with the Schiötz tonometer was 57, and the vision $^{8}/_{150}$. The cornea was steamy over the central portion. The pupil was 6 mm. in diameter. There was a shallow anterior chamber. Only a dim view could be obtained of the disk and vessels. There was a small, old retinochoroidal atrophic spot in the lower nasal portion of the fundus, and a larger one in the temporal portion of the fundus. The field was practically confined to the temporal half, and in this half was greatly restricted.

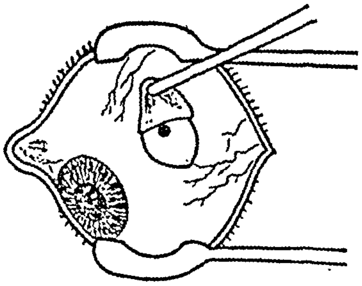

Fig. 1.—Postciliary scleral trephining for acute glaucoma: Location of the wound in the neutral region, midway between the superior and the external rectus muscles.

With the aid of physostigmin and pilocarpin the cornea and media cleared to the extent that arterial pulsation on the disk was readily observed and there was marked cupping of the disk, which seemed to be physiologic. Also the vision rose to $^{20}/_{60}$, but the pupil remained wide, 6 mm. in diameter, under repeated instillations of physostigmin. The nasal examination by Dr. Sluder showed a general chronic atrophic rhinitis of low grade. The blood pressure was 140, systolic.

July 25, as there was no evidence of permanent improvement, a postciliary scleral trephining was performed in the upper temporal portion of the globe 7 mm. from the corneal margin, the operation being one that has already been described,[1] a diagram of which is here reproduced (Fig. 1). In this procedure the eye is first anesthetized with holocain, 1 per cent., and cocain, 5 per cent., and a minim of 1 per cent. cocain solution is then injected hypodermically at the site of the intended opening in the sclera. After from three to five minutes an 8 to 10 mm. conjunctival flap is raised from below and the wound is located at the center of the base of this flap, which is placed preferably in the neutral region, either between the external rectus and the superior rectus, or between the external rectus and the inferior rectus muscles. The flap may be dissected from the sclera over its whole area, or the conjunctiva may be dissected to Tenon's fascia only as far as to the base of the flap, and here with scissors it may be cut through the fascia to the sclera at the site of the wound to be trephined. It has seemed that better drainage was obtained by the last method.

In this particular case the entire flap was dissected through to the sclera, and with a 2 mm. trephine the sclera was then trephined through the choroid, 7 mm. from the corneal margin. This membrane bulged into the wound but did not rupture. The conjunctival flap was then replaced by means of a suture at the apex, and the eye was cleansed with physiologic sodium chlorid solution and bandaged. Following the operation there was no appreciable reduction in the tension, as determined by palpation with the fingers. The operation was practically painless, and there was no subsequent pain. At the time of the first dressing, forty-eight hours later, the globe was very quiet, the cornea clearer than at the time of the operation, the pupil round and central and 7.5 mm. wide, there was a good reflex from all portions of the fundus; there were no details. Vision was reduced to *fingers at 1 foot*, eccentric to the right. There was no appreciable change in the tension of the globe, but the patient remarked that the eye was "more comfortable than it had been in three weeks," because it had felt as if the globe was "too large for the socket." This discomfort had ceased. Under the constant use of physostigmin, 0.5 per cent., the vision returned to 20/60, eccentric to the right, during the succeeding four weeks, and the field was somewhat reduced in size. There was marked protrusion of the conjunctiva over the trephined area, and the opening in the sclera was readily seen through the conjunctiva and shown to be clear by transmitted light.

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* Read before the Section on Ophthalmology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

[1] Ewing, A. E.: Am. Jour. Ophth., July, 1917.

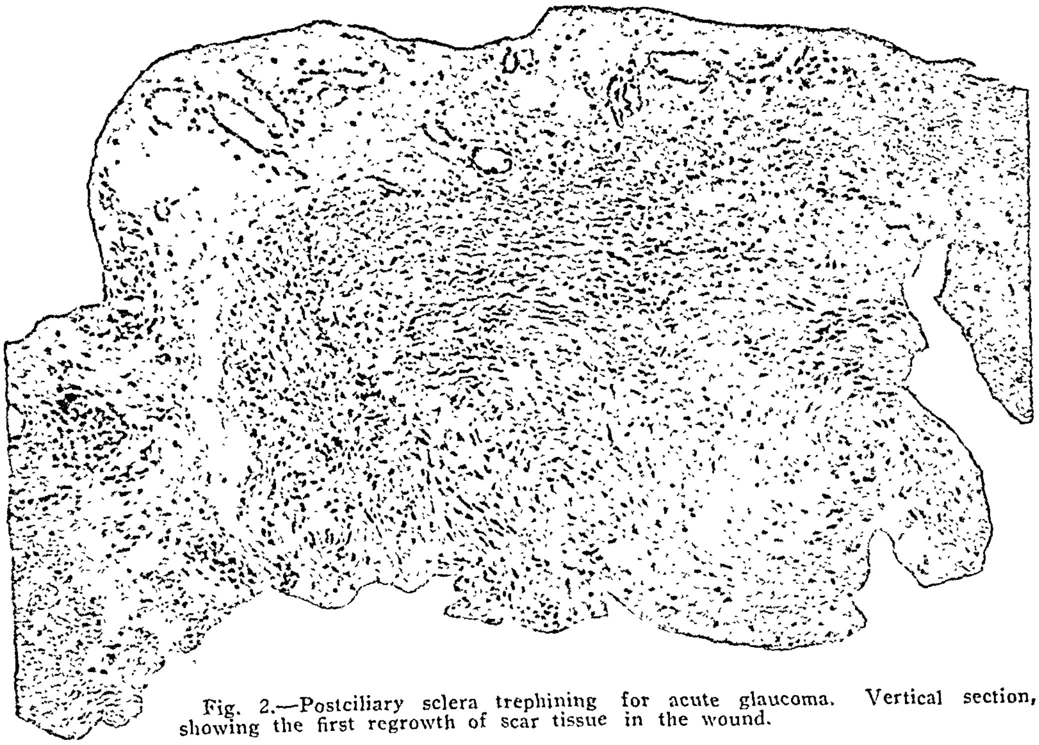

Fig. 2.—Postciliary sclera trephining for acute glaucoma. Vertical section, showing the first regrowth of scar tissue in the wound.

September 19, the tension was 60 mm. of mercury by the Schiötz tonometer. September 24 it was 55; there was no discomfort; the media were clear; there was marked arterial pulsation on the disk. Vision was 20/120, eccentric to the right.

September 25, I raised a conjunctival flap over the trephined area and discovered that the apparent protrusion of the conjunctiva, which I supposed was a delicate cystic scar, actually consisted of dense tissue formed from the sclera, a vertical section of which is shown in Figure 2. It was removed by means of a Graefe knife on the flat in the plane of the sclera. It did not seem to be connected with the choroid, which was later slit open by the knife on the flat, also in a plane with the sclera, and this incision in the choroid was followed by three large drops of vitreous, which were removed in succession with the spatula until it ceased of itself to flow. This left the globe very soft.

September 26, the globe was soft; the media were clear; there was no arterial pulsation on the disk; there was a small, diffuse, nearly central retinal hemorrhage. Vision was fingers at 4 feet. The pupil was 6 mm. in diameter, not affected by physostigmin. During the following few days other small peripheral hemorrhages appeared in the retina and several minute adhesions of the pupillary margin to the lens became evident, yet there was no other indication of iritis and no cyclitis.

October 3, vision was 20/240, eccentric. Tension by the Schiötz tonometer was 9. The media were clear. There was no arterial pulsation on the disk. The globe was quiet. There was no tenderness on pressure.

Now follows the extremely interesting part of this experience, and it demonstrates that acute glaucoma is not cured by direct loss of vitreous. Also it demonstrates that glaucoma is dependent on the drainage of the aqueous, and that this drainage may be by way of the vitreous, provided it could be sufficiently maintained by this route.

October 5, the vision of the right eye was motion of the hand at 6 inches. Tension by the Schiötz tonometer was 51. The fundus details were very indistinct. Following the employment of physostigmin salicylate, 1:240, twice during the next three hours, vision became 20/150, and the media became sufficiently clear to detect marked arterial pulsation. This pulsation ceased after massage of the globe over the wound, the eyelids being closed, but without further improvement in the vision.

October 7, vision was 5/150. The globe was hard, and there was marked conjunctival protrusion at the site of the wound. Incision through this was followed by a free flow of aqueous, no vitreous, and reduction of tension to below normal.

October 9, vision was 10/38. There was no arterial pulsation on the disk, and there were *no new hemorrhages*.

October 10, the patient reported an uncomfortable night. The eye was painful, the globe hard, the disk blurred; there was a mere outline of the vessels. Vision was 3/66. The conjunctiva was distended at the site of the wound. I incised the distended bleb with a sickle needle. One hour later, vision was 10/48, the media were clear; there was a clear view of the disk and vessels. There was no arterial pulsation, the globe was soft, and there were no fresh hemorrhages.

October 11 and 12, vision was 10/38, the media were clear, and there was no arterial pulsation.

October 13, the patient felt severe pain for several hours. Tension was high. The disk was blurred. Vision was 5/75. The conjunctiva at the site of the wound was distended. Following incision there was free discharge of aqueous, no vitreous, and immediate relief from pain. Half an hour later, the media were clear. There were no new hemorrhages. Vision was 10/38.

October 15 the condition was similar. Incision was made with similar results.

October 17, vision was 1/192. Tension was high. The disk was indistinct. There was subconjunctival evacuation of aqueous from the site of the wound. Ten minutes later the tension was below normal. The media were clear. Vision was 10/48.

October 18 there was similar refilling of the globe. Incision was made with similar results.

October 22 and 23 there were repetitions of this.

October 29, vision was 10/192. I repeated the scleral trephining after partially elevating a thin conjunctival flap. The globe was quiet except in the region of the wound, where there was moderate conjunctival infiltration. On this account the dissection of the flap was difficult, as the conjunctiva was very friable. Following the removal of the trephined "button," there was a free flow of aqueous, no vitreous; suture was omitted. A reproduction of a vertical section through this trephined "button" is shown in Figure 3, and again demonstrates a firm fibrous scar.

November 1, vision was 10/38. Tension was normal. The media were clear. There was no arterial pulsation on the disk. There were no new hemorrhages.

November 7 the field was telescopic. Vision was 10/120. There was marked arterial pulsation. The media were clear. The conjunctiva over the wound was distended. Immediately following incision, the vision was 10/60.

After this, as the media remained clear, although the arterial pulsation on the disk returned, pilocarpin and physostigmin and massage were relied on for controlling the pulsation, which usually ceased temporarily with their employment.

Jan. 9, 1918, vision was reduced to hand movements at 1 foot. There was nothing to account for this change except the continued increased tension. The media were clear, there was arterial pulsation on the disk, and the globe was entirely quiet.

January 12, postciliary scleral trephining was performed with a 2.5 mm. trephine in the upper nasal portion of the globe. The scleral "button" split from the deeper portion of the sclera just as the choroid was approached. The remaining sclera was teased through to the choroid without rupture of the choroid over a space 1.5 mm. in diameter. The conjunctival flap was replaced by suture. There was no apparent relief to the tension. No pain followed the operation.

January 16, vision was 0. The media were clear, the globe quiet, there was moderate arterial pulsation, tension was as before operation, there was no choroidal reaction, and the eye was entirely comfortable.

February 23, although the globe was entirely quiet and comfortable, an incision was made in the wound first trephined to demonstrate whether any vision might return after so long an interval of blindness. The media were clear. There was moderate arterial pulsation on the disk. Tension by the Schiötz tonometer was 54. This incision was made first through the conjunctiva and then through a firm tissue protruding from the scleral wound. There was a free flow of aqueous, but no vitreous. Arterial pulsation on the disk ceased immediately. For the first time in this series of tappings of the globe there was a slight flow of dark pigmented fluid from the wound into the lower portion of the vitreous. This seemed to be a serous fluid stained with hematin or with pigment from the choroid or retina. It ceased immediately. Four hours later the arterial pulsation had become reestablished. There was no return of vision.

March 2, the globe was entirely quiet and comfortable, the pupil 6 mm. in diameter, the media clear, arterial pulsation on the disk, a small hemorrhage of the retina below the disk, a little floating exudate in the vitreous, and moderate conjunctival distention at the site of each trephined wound.

March 8, the fundus was quiet, the media clear, the globe entirely quiet and comfortable, the pupil 6 mm. wide, slight consensual response of pupil to light. Tension by the Schiötz tonometer 70, which was 13 mm. higher than before the several operations, moderate arterial pulsation on the disk, no change in the cupping of the disk, and the globe entirely quiet and comfortable. No medicines had been used during the last two weeks.

COMMENT

The case has ended unfavorably, and is unfavorable to this mode of treatment for acute glaucoma, if the condemnation of such treatment in the future is to be based on the result from one case. In my own hands cases just as favorable for operation, and even more favorable, have ended in the same way by methods considered generally as the best for glaucoma operations, namely, the iridectomy of von Graefe and sclerocorneal trephining. The experience here indicates that safety in glaucoma depends on the drainage. If drainage can be obtained by this method, it is safest of them all, because there is no danger to the lens.

The several procedures in the case demonstrate that:

1. The removal of vitreous in such quantity that the tension of the eye is far below normal is no more a cure for glaucoma than is the removal of the lens.
2. Drainage may be established by way of the vitreous chamber.
3. A trephined wound in the sclera is closed by newly formed fibrous tissue, in the same manner as a trephined wound at the sclerocorneal margin.
4. A trephined wound of the sclera in glaucoma is not a more dangerous wound than a wound in the sclerocorneal margin.
5. The clouding of the cornea and the vitreous, and the arterial glaucomatous pulsation on the disk, may be instantly relieved by drainage from the vitreous, with immediate restoration of vision.
6. The "full feeling" and the pain of acute glaucoma are relieved by sclerocorneal trephining, even though the choroid is not disturbed and there is no apparent lowering of the tension.
7. The lens is not affected by the operation.
8. Miotics are of as great value following the operation as before the operation.

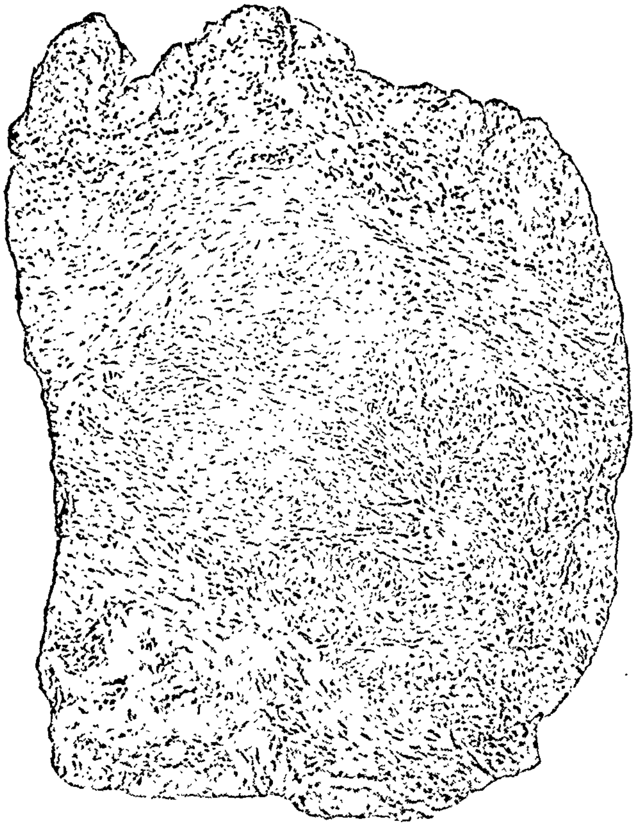

Fig. 3.—Postciliary scleral trephining for acute glaucoma. Vertical section, showing the second regrowth of scar tissue in the wound.

9. A painful glaucomatous eye will become comfortable after postciliary scleral trephining without visible operative defect, and without material lowering of tension.

Query: What are the compensatory avenues in the circulation in an eye in which there was pain and marked blurring of the media with the tension at 57, to cause it to become entirely quiet and comfortable, media clear and no appreciable change in the cupping of the disk, with the tension at 70?

ABSTRACT OF DISCUSSION

Dr. William F. Hardy, St. Louis: Dr. Ewing stated that a wound in the sclera is not more dangerous than one at the corneoscleral margin. In my opinion it is less dangerous. Last summer I performed a number of operations through the sclera by various methods, to note the length of time such wounds stay open, and the manner in which they heal. It was found impossible to delay or prevent the scleral wounds from healing; they healed very promptly no matter what method of operating was chosen. They remained patulous for possibly a week, after which they gradually filled in with dense fibrous tissue, and at the end of the month were completely healed. Dr. Ewing, therefore, has added evidence to the fact that posterior drainage operations are of temporary effect only, but are poor reeds to lean on for permanent effects in glaucoma.

Dr. Arthur E. Ewing, St. Louis: Since beginning this work about a year ago I have performed half a dozen of these operations in cases of chronic glaucoma, one a case with a tendency to iritis, and one a case of acute retinal separation. In each of the cases there is a protrusion at the site of the wound, a very large protrusion in a case in which a 3 mm. trephine was employed, too large to be sclera or newly formed scar tissue. In contradistinction to this, in the case with retinal separation, there was no protrusion at the site of the wound, the globe being subnormal in tension. The same condition obtained in the case of chronic glaucoma with a tendency to iritis, the tension of which was 40, but became subnormal after the operation and remained subnormal. This fact, that there is no distention without intraocular pressure, indicates that there must be some form of drainage.

TREATMENT OF NEURALGIA OF THE FIFTH NERVE BY INJECTION OF THE GASSERIAN GANGLION *

H. H. MARTIN, M.D.
SAVANNAH, GA.

The injection of the ganglion of Gasser through the foramen ovale for the relief of trigeminal neuralgia has passed beyond the experimental stage and will eventually supersede surgical extirpation of the ganglion, division of the sensory root, peripheral and nerve trunk injection, and other more or less unsatisfactory procedures. The operation is, of course, a very delicate one and requires, in addition to thorough knowledge of the topography of the parts, some surgical skill and dexterity; the needle will necessarily pass very near to important blood vessels, principally the internal maxillary artery, which lies in close proximity to the inferior maxillary nerve in the sphenomaxillary fossa and sends a small meningeal branch through the foramen ovale.

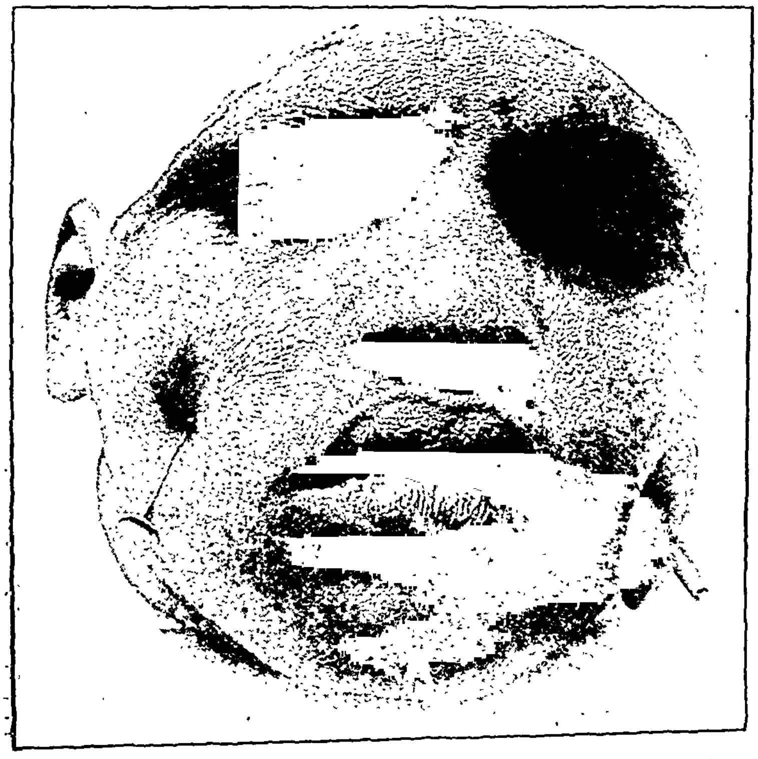

Fig. 1.—Left side shows needle in correct insertion. Right shows stylet displaced outward by postmortem contraction of skin.

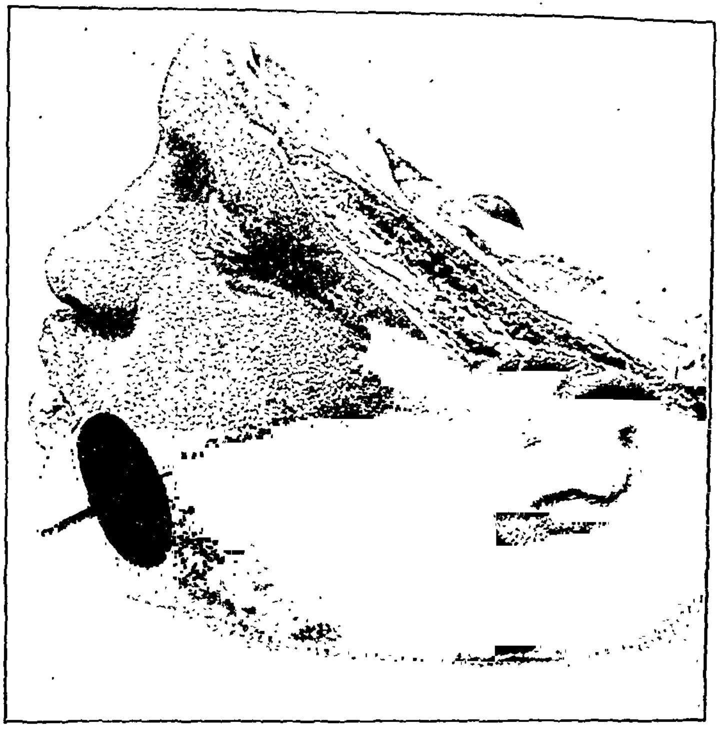

Fig. 2.—Same as Figure 1 in profile.

If improperly directed, the needle may enter the foramen spinosum, the jugular foramen, or an anomalous foramen transmitting an emissary vein known as the foramen Civinini, occasionally found just below the foramen ovale. If the needle is passed too far through the foramen ovale, possible injury might occur to the cavernous sinus or even the internal carotid, both of which are in intimate relation with the ganglion. But all such accidents can be safely guarded against; and the procedure, though a formidable one, is not so formidable as the surgical extirpation of the ganglion, while the desirable results are equally good and the undesirable results, such as paralysis of other cranial nerves, weakness of the muscles of mastication, and neuroparalytic keratitis, are never so bad.

The history of this operation, like many others, is one of evolution, and dates back to 1903, when Schlosser, an ophthalmologist of Munich, discovered by chance that subcutaneous injections of alcohol in or about an offending nerve afforded prompt relief from pain.

This idea has been taken up and elaborated on by many investigators in France, England, Germany and America, including ophthalmologists, rhinologists, neurologists, general surgeons and others, until there has been evolved a very simple method of injecting the ganglion of Gasser through the foramen ovale, which can be acquired by any one who will give sufficient time to experiments on the cadaver.

The indications for injection of the gasserian ganglion are the same as those for gasserectomy, namely, severe trifacial neuralgia, for which the cause cannot be discovered, or if discovered, cannot be removed. There are no serious contraindications; heart disease, high blood pressure, kidney lesion, etc., while increasing the seriousness of the situation, are not contra-

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indications. Some measure for relief is necessary, and the injection is less dangerous than gasserectomy.

The finer distinctions between so-called essential neuralgia, postherpetic neuralgia, etc., have no place in this paper, which is limited to treatment; but I desire to say in passing that I do not believe that any of the procedures enumerated in the first paragraph of this paper will be of any benefit in a painful "tic" having its origin proximal to the ganglion of Gasser; on the contrary, those directed to the nerve trunks often aggravate the condition. The surgical or chemical destruction of the ganglion cells, however, will often give temporary relief from pain.

Therefore, given a case of painful "tic," the question arises as to what is to be done. Internal medication, massage, radiotherapy and electrotherapy have all been tried in the balance and found wanting. We have remaining the destruction of the central ganglion or of the nerve branches either surgically or with chemical solutions. It is my opinion that surgical methods should be abandoned in favor of those based on the direct application of chemicals calculated to destroy either the ganglion cells or the conducting fibers, and of these, the former is to be preferred, because the ganglion cells are the more vulnerable, as shown by the immediate positiveness and longer endurance of the results. Of the chemical agents that have been employed for this purpose I may mention osmic acid, chromates, formaldehyd solution in glycerin, phenol (carbolic acid) or menthol, chloroform, ether, antipyrin, salicylates and quinin salts, all of which have been abandoned in favor of alcohol in various strengths (from 70 to 95 per cent.). Also there are various chemicals which will give a temporary analgesia and anesthesia as well without destruction of nerve tissue, the chief of these being, of course, the cocain group.

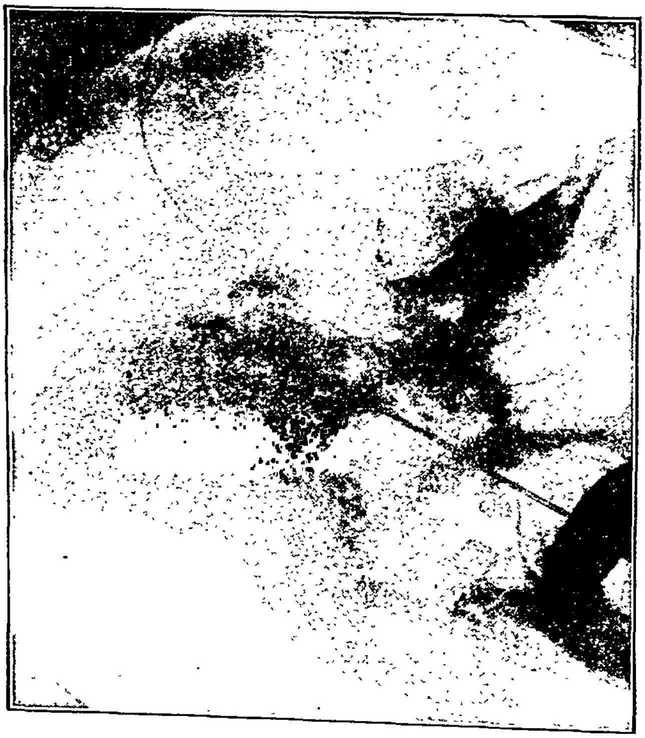

Fig. 3.—Right side shows needle in correct insertion with point in the ganglion. On the left side a wire has been passed through the needle and through left cerebrum with the idea of entering the lateral ventricle by this route to ascertain what structures might be injured.

The trigeminal divides at the gasserian ganglion into three principal trunks, the ophthalmic, the superior maxillary and the inferior maxillary. The ophthalmic divides into three terminal branches, the superior maxillary into six, and the inferior maxillary into seven; all sensory excepting the latter, which is mixed, carrying motor fibers to the muscles of mastication.

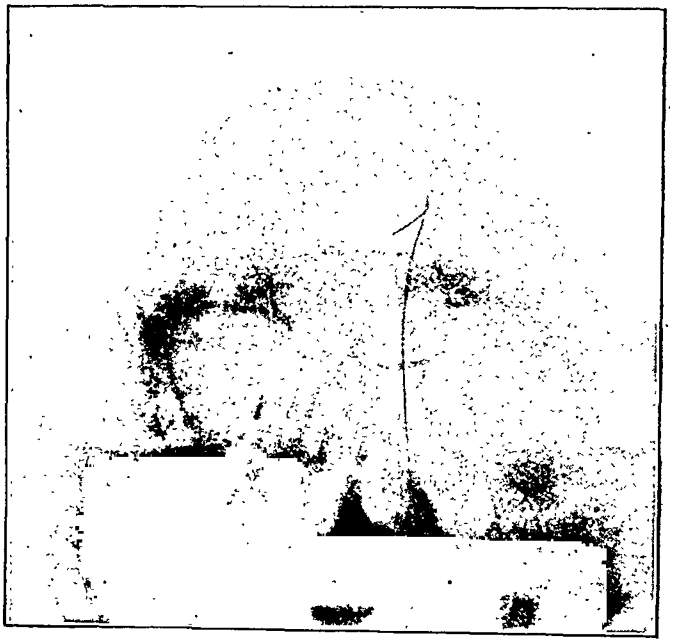

Fig. 4.—Same as Figure 3, front view. Note wire passing through posterior horn of left lateral ventricle and out at the vertex. So far as could be determined on the cadaver, no important structures would be endangered through entering the ventricle by this route. Right side shows point of needle resting in the ganglion.

In a recent paper, Sicard contends that alcohol nerve blocking treatment is adapted only to what he describes as essential neuralgia, differentiating thus: If the pain keeps up continuously, or if there is concomitant anesthesia of skin or mucosa, it is not essential neuralgia; or when the neuralgia comes on abruptly in all the three branches at once, or when other cranial nerves are involved and there are trismus, hemiatrophy of the tongue, etc. These forms of neuralgia are secondary, and injection of alcohol not only does no good but may even aggravate them. Hence it is necessary to have the patient examined by specialists in the nose, ear, eye and teeth, before assuming that a trigeminal neuralgia is of the essential type. Migraine must also be excluded, as also the neuralgia after herpes zoster. He warns us also against the neurasthenics.

I quite agree with this conclusion so far as it applies to injections into nerve trunks or branches; but injections into the central ganglion of the trigeminal system, or, better still, injection into the sensory root, has in my opinion a larger application than nerve blocking per se, and is a justifiable procedure in all cases of painful "tic" not otherwise relievable. I have never known of its doing serious harm when properly performed. There is always a very marked temporary relief, and it can be repeated ad libitum.

The technic of the injection is simple in the extreme, but ability to locate and enter the oval foramen can be acquired only by extensive and patient trials on the cadaver; but in every sense of the word it is eminently satisfactory both as to the accuracy with which it can be accomplished and as to the results.

If pain is limited to the area supplied by the third branch only, the injection can to a certain extent be limited to this branch; but if the first or second branches are involved, the needle should be inserted into and through the corpus of the ganglion until the point has penetrated the sensory root. This can be accomplished with a reasonable degree of accuracy. It is my practice to attempt this in every case. The only serious consequence involved is a neuroparalytic keratitis which in my experience occurs in about 30 per cent. of all successful injections, but rarely involves the deeper layers of the cornea, and in most instances recovers in due time without injury to the eye.

Wilfred Harris of London, who is one of the pioneers of direct injection of the ganglion through the oval foramen, says:

> When first I practiced injection of the foramen ovale on the dead body, I found, practically invariably, that when the needle point was placed within the nerve at the lips of the foramen, without pushing the needle through the foramen, injection of solution of methylene blue infiltrated the whole gasserian ganglion, the stain even surrounding the walls of the cavernous sinus, and even spreading down the anterior surface of the pons. Clinically I have thus injected the ganglion in scores of cases, anesthesia first appearing over the third division; and as more alcohol is injected, a few drops at a time, the anesthesia spreads over the second and first divisions until, after using from 1 to 1.5 c.c., the whole territory of the fifth nerve has become anesthetic. The patient indicates this spread of the alcohol by slight burning pain being felt around the eye and top of the head, and on testing with a pin there will be found total anesthesia to pin-prick and to pressure over the whole front of the head on one side, including the eyeball. If the alcohol has been slowly injected a few drops at a time, the anesthesia being tested after each injection, this total anesthesia will begin to fade away after a lapse of five or ten minutes from the first and second divisions, and an hour or so later, or the next day, there will be found slight analgesia on the forehead and cheek only, while total anesthesia persists over the third division.

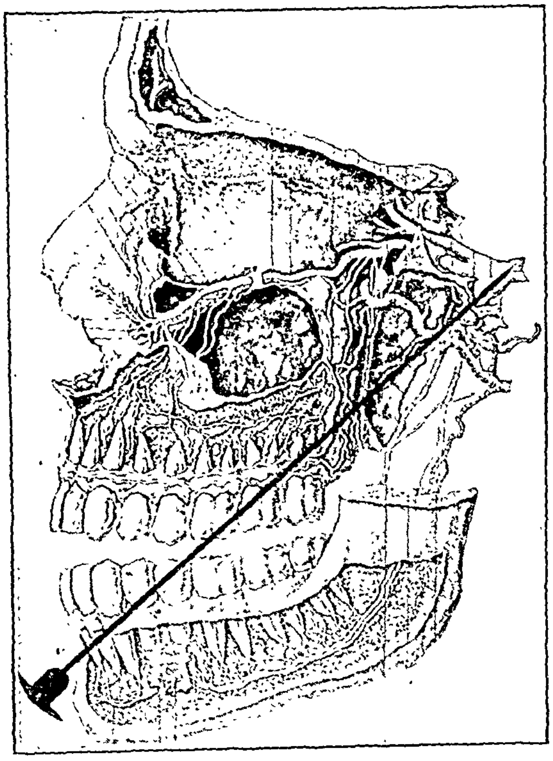

Fig. 5.—Schematic, showing needle point in sensory root.

> It is important not to inject more than a few drops of the alcohol at a time, and to wait at least two minutes for testing the anesthesia on the forehead before pushing in any more alcohol. As soon as total anesthesia develops over the forehead and eyeball, there is a possibility that the damage to the ganglion cells may be so great that the total anesthesia does not evaporate, as is usually the case, though in the majority of cases as much as 0.5 c.c. of alcohol may be further injected after total anesthesia appears, without risk of its being permanent. When a total of more than 1.5 c.c. has been injected, this risk is a very real one, and if total anesthesia still persists half an hour after the injection, the eyelids should be closed by rubber plaster and a pad and bandage, in order to prevent the risk of keratitis developing, which is certain to appear on the following day if total anesthesia is still present. If, however, sensation is returning in the first division and pressure on the eyeball can be felt definitely, then the risk is past. When, however, the anesthesia is still complete on the following day, then it is practically certain to persist for weeks or months and the eyelids should be sewn up, leaving a chink at either canthus for washing out the palpebral cavity with saline. So long as the lids are kept closed, keratitis will not develop, and even a certain degree of keratitis which had developed, previous to the sewing up of the lids, will clear up. I have been forced to have this treatment adopted in seven patients whose ganglion I had injected. The cure of the neuralgia is, however, certain and likely to be permanent, though my first case of injection of the ganglion dates back only four years.
>
> In many subjects it is possible to push the needle through the lips of the foramen ovale into the ganglion itself, though this is rarely necessary. A curious point, which I am unable to explain, is that after the ganglion injection, the anesthesia in the first division is more intense and more lasting than in the second or third divisions, a point which is peculiarly unfortunate, owing to its dependent keratitis.

I have incorporated this extensive quotation into my paper for two reasons: First, it clearly sets forth some essential facts regarding this procedure, and second, it embodies some conclusions with which I do not entirely agree. I do not agree, first, that the injection should begin at the lips of the foramen ovale and that it is rarely necessary to push the needle through the ganglion. This, in my opinion, is erroneous. The needle should not only be pushed through the ganglion but an attempt should be made to place the first 0.5 c.c. of the alcohol directly into the posterior root, injecting the remainder into the ganglion as the needle is withdrawn. Naturally if the alcohol is injected only at the lips of the foramen, the anesthesia in the first and second divisions would begin to fade away after a few minutes, because actually only the third division has been injected, the other two being temporarily affected by percolation of the injected fluid. If the patient is to have a permanent cure of the neuralgia, he must also be prepared to endure a more or less permanent anesthesia as well.

Secondly, I disagree with the suggestion that the eyelids should be sewed up. Never, never do that! If a neuroparalytic keratitis should occur, the eye must be suitably protected, and it should also have the benefit of daily cleansing with instillations of atropin and argyrol solutions.

The assertion that "so long as the lids are kept closed, keratitis will not develop" is also erroneous, keratitis often appearing during the first twenty-four hours, manifesting itself first as an epithelial exfoliation usually directly at the apex of the cornea, although I have seen it in the lower segment.

TECHNIC OF THE OPERATION

The technic should in the first place be strictly surgical with the patient lying supine and under a general anesthetic. I have the skin of the entire face on the side to be injected cleansed, first with benzin followed by iodin and after a few minutes with alcohol. I then study the contour of the face and head, getting a mental picture of the location of the foramen ovale (which is not by any means constant but varies in different individuals). The needle, which is 10 cm. long graduated up to 8 cm., is then with one deliberate thrust inserted into the sphenomaxillary fossa; at this time it is well to pass through the needle an obturator or stylet which serves several purposes: First, it extends a little beyond the point of the needle, rendering the needle point less sharp, thus limiting the chances of injury to blood vessels encountered. Secondly, it clears the lumen of the needle of any inpedimenta that may have been acquired during its passage through the cheek wall. Finally, it prevents obstruction of the needle during its further passage.

The needle is now advanced cautiously in the direction of the foramen as pictured in the mind of the operator, and if he is lucky, will often pass at the first thrust directly into the foramen without touching the bone at all. The operator will immediately recognize this fact by the sense of touch, if sufficient practice has been had on the cadaver. If bone is encountered, however, one must then ascertain the depth to which the needle has penetrated, and if this should be approximately 6 cm., the point is in the neighborhood of the foramen. If, on the other hand, it should be less than 6 cm., the point is above the foramen, and if more than 6 cm., the point is below the foramen. Gentle manipulation, with the topography well in mind, will usually place the point in the foramen without having to withdraw and reinsert the needle.

When one finds the needle in the foramen, it is well to pause and again study the contour of the face and head, not neglecting to slide the skin of the face upward on the needle where it has suffered slight depression or dimpling from the passage of the needle. This should show a penetration of about 6.5 cm. A firm hold on the needle is taken and it is advanced until the 8 cm. mark is almost reached or until a certain fibrous resistance is encountered, which indicates that the dura has been reached and consequently the insertion is too deep. In this case, the needle is slightly withdrawn, leaving the point as nearly as possible resting in the sensory root; the stylet is now withdrawn and the operator waits a moment, carefully observing whether either cerebrospinal fluid or blood should well up through the needle. In the former case, the point is within the dura and should be slightly withdrawn before the injection is made; in the latter case, the point is within the lumen of a blood vessel and the injection must not be attempted until the operator is absolutely sure that this position has been corrected, as very disastrous results have been reported from the injection of alcohol into a blood vessel, among them, gangrenous necrosis of the palatal bone with sequestrums. However, this is an unpardonable error and should never occur.

I always inject preliminary to the alcohol, 5 to 10 minims of a 0.5 per cent. solution of cocain or a 2 per cent. solution of procain. This is done for the purpose of inducing temporary anesthesia in the area supplied by the fifth nerve, in order that the patient may not suffer from the great burning pain caused by the action of the alcohol after recovery from the anesthetic. To complete the operation, 2 c.c. of 95 per cent. alcohol are now drawn into the syringe, half of which is injected in or near the posterior root, the remainder being slowly distributed throughout the ganglion as the needle is withdrawn.

In case a general anesthetic is not used, the only modification of this procedure is preliminary injection of a local anesthetic into the skin and subcutaneous tissues of the cheek and again when the point of the needle reaches a depth of 6 cm., waiting in each instance from five to ten minutes for full effect. In order to accomplish this the stylet will, of course, have to be removed temporarily, but must in all instances be reinserted before the needle is farther advanced.

In some instances, as stated, the needle will find the foramen with astonishing ease, while again one will have to grope for it patiently and persistently. The point of entrance is usually about 2 cm. above and external to the corner of the mouth. The needle should closely graze the alveolar process of the upper jaw, passing between this surface and the ramus of the lower jaw. With the patient supine and the head bent backward at an angle of about 30 degrees, the direction is almost perpendicular; but if the head is held erect, the direction is about 15 degrees upward but will vary in different subjects.

In old persons who have neither teeth nor alveolar process in the upper jaw, the locating of the foramen is exceedingly difficult but not by any means impossible.

The immediate results of a deep injection, as advocated in this paper, are anesthesia of the entire area supplied by the fifth nerve, which persists for a variable time and in variable degrees, and an analgesia which in the great majority of cases will be permanent.

REPORT OF CASES

Case 1.—A man, aged 23, was suffering from genuine unilateral neuralgia of the left side, which had existed for from one and one half to two years. The operation was classical; a few minims of procain solution in the skin and subcutaneous tissues produced perfect local anesthesia, and the needle passed through the cheek and sphenomaxillary fossa without pain When the inferior maxillary nerve was reached, sharp pain was complained of, which was almost immediately relieved by a few minims of procain. The needle was then advanced 1 cm., and when pain was complained of, procain was again injected; when the needle was advanced another 0.5 cm. and procain injected, the patient at once remarked that he had a strange feeling in the eye, face and tongue. One c.c. of alcohol was then injected without pain, and the patient was found to have complete anesthesia of cornea, skin and mucous membranes supplied by the fifth nerve. This patient developed a neuroparalytic ulcer in the lower temporal quadrant of the cornea, which persisted for weeks. He would not remain in the hospital, but was seen once a week for two months. When discharged, the corneal ulcer had healed with only a slight opacity, as the ulceration had been very superficial, apparently no deeper than the corneal epithelium, and gave him no trouble at all. When last seen, three months after injection, there was practically total anesthesia of the entire area supplied by the fifth nerve, and no return of "tic."

Case 2.—A woman in Dr. Horsley's service at the Memorial Hospital, Richmond, had been a victim of trigeminal neuralgia for years and had had numerous peripheral operations, including resections and nerve trunk injections. She complained that all of her injections had been exceedingly painful and of little benefit. She was suffering intensely when I first saw her, and would cry out if even a motion were made to touch her face. The entire distribution of the nerve was apparently involved, but the mandibular division seemed to be the most affected, this area being exquisitely sensitive. She would cry out if the floor were jarred or the bed brushed against, and, in short, presented a typical trigeminal neuralgia. Incidentally, she had become a morphin habitué. The injection was done under ether anesthesia, and the patient was seen the next morning sitting up eating breakfast, free from pain, and has remained so ever since (four years). Furthermore, she was freed from the morphin habit and returned to her home a very happy woman.

Case 3.—A woman, aged 30, of a highly neurasthenic type, had suffered from painful "tic" on the left side for years, with occasional attacks on the right side. Nasal examination revealed constant contact of both middle turbinates with the septum. This was corrected without relief. She then visited Sluder and had an alcohol injection in the sphenopalatine ganglion on the left side without relief. Previous to this she had had divulsion of the supra-orbital and of the mandibular through their respective foramina. In the latter part of November, 1914, the left ganglion was injected with 1 c.c. of 95 per cent. alcohol with immediate relief from pain lasting four months. She had total anesthesia of the entire area with abducent paralysis on the left side, the latter persisting through a second injection of 2 c.c. of alcohol four months after the first one. The relief from the second injection lasted about the same length of time, when severe pain recurred in the mandibular branch.

Case 4.—A woman, aged about 60 was brought into the hospital suffering from tic douloureux on both sides, with spasmodic "tic" involving the muscles of mastication on the right side, the pain on this side being very great. Her history was that of long-standing trigeminal disorder on both sides. The ganglion on each side had been extirpated some years before by Cushing with considerable relief, but not a complete cure. On the right side numerous peripheral operations had been done without relief. The stump of the posterior root of the right ganglion was injected with 2 c.c. of 95 per cent. alcohol under ether anesthesia, with prompt relief from both spasmodic and painful "tic," which lasted about two and one-half years. A second injection was made in this case about four months ago with only moderate relief from pain, but curiously enough we had this time a slight exfoliation of corneal epithelium which did not occur after the first injection.

Case 5.—A man who had had excruciating pain for years came into the clinic of Dr. H. B. Dechard of Dallas, Texas. An injection was done under local anesthesia, and was classical, the needle entering the ganglion at once. However, when the alcohol was injected, the patient was greatly nauseated, and complained of sudden deafness, dizziness, etc. The immediate results were total analgesia, total anesthesia and partial paralysis of the muscles of mastication which still persist (three years after operation). The only complication was a neuroparalytic keratitis, which ulcerated and did some damage to the eye, but from which the patient eventually recovered.

About this time my work was interrupted by a serious automobile accident which forced me to remain idle for two years. My sixth patient, therefore, was not seen until January of this year.

Case 6.—A woman was sent to me by Hillard Wood with a history of long-continued painful "tic," with many futile attempts at relief. The injection was done under ether anesthesia, and the relief was prompt and apparently permanent. She had neuroparalytic keratitis which ulcerated and had not healed at last report (three months after operation). She also had abducent paralysis.

Case 7.—A woman was injected, March 13, 1918, under ether anesthesia. Relief was prompt and apparently permanent. She had slight exfoliation of the corneal epithelium, but no ulceration.

Each of these patients had herpetic ulceration of the lips, tongue and buccal mucous membrane on the injected side, which invariably disappeared within two weeks. All of the patients complained in a greater or lesser degree of the various paresthesias and isolated spots of hyperesthesia originally described by Haertel.

ABSTRACT OF DISCUSSION

Dr. Hugh T. Patrick, Chicago: From the pictures I gather that Dr. Martin uses the method of Haertel, independently worked out by a New Orleans surgeon whose name I forget, in both instances for purposes of local anesthesia. To use the method for neuralgia was a second thought. Like all other methods of deep injection it is uncertain. Owing to marked differences in size and shape of the skull, the foramen may be very difficult to find, and one never knows just where the point of his needle is. I have never used the Haertel method because of the inherent dangers, although I think it might be the operation of choice when simpler and safer methods have failed. The Harris method of injecting the ganglion I have used successfully several times, though in some heads it is impossible. In my opinion we are not prepared to say that injection of the ganglion or of the sensory root cures trifacial neuralgia. Personally, I believe that it does not, though, of course, it may give relief for five years or more.

After making more than 1,000 injections in several hundred patients my opinion is that if the patient is relatively young and in good physical condition, the radical operation should be done, provided it be done by a high-class surgeon with experience in this operation. For the very old and for those with grave organic disease one of the injection methods is indicated.

Dr. Joseph C. Beck, Chicago: I would like to take issue with Dr. Patrick on his last remark, that there is a question of choice between the radical operation or injection. I should say, first try the injection, no matter what the condition is, and then if that fails do the radical operation, because we always have time for that. Dr. Martin certainly has had a great deal of experience in injection of the foramen ovale and speaks with more authority than I can. I have a record of forty-seven injections of the foramen ovale—that is forty-seven times, not forty-seven cases. Three injections were successful, and two were successful by the radical operation—one just the cutting of the sensory root—as recently recommended by Fraser.

In regard to the stylet, I use the Sluder needle, with a wire in it. In feeling for the foramen I depend on the flat plate at the base of the skull. These landmarks of the teeth for direction are all well enough but, as Dr. Patrick said, heads differ, and we must feel for the foramen at the external pterygoid plate close to the base of the skull. You must also consider the amount of fat there is on the face. Some people have 3 inches of fat on their face. The roentgen ray will give much information as to just how far the malar bone protrudes. The malar bone will give quite a lot of information as to how far you should go, and it is well to have a roentgenogram. I have never encountered any cerebrospinal fluid in any case that I injected. I have gotton a few drops of blood from the needle, and, of course, there was no injection made in those cases at that time. Nothing was said about the spilling of a large amount of fluid and the effect on the neighboring nerves. The sixth nerve is very close and I have seen paresis of the abducens follow that lasted for two months after the injection of alcohol for tic douloureux. I have tried the Harris method in three cases, but the point I would like to make is, that in a case where we fail with injection the operation Dr. C. H. Frazier recently described is the operation of choice.

Dr. H. H. Martin, Savannah, Ga.: I want to take exception to nearly everything that Dr. Patrick has said. His entire argument falls down when he admits that he has never done this operation, has not seen it done, and is unwilling to attempt it. There is only one way to learn to do the operation and that is to do it many times on the cadaver. You must do it and keep on doing it until you have acquired sufficient skill to know just where the needle point is at all times. Often the needle will slip into the foramen with the most astonishing ease; but sometimes you will have to grope for it. I have only treated nine cases and out of the nine all but two have remained free from pain for four years. If that is not a cure, what is? Unfortunately, I met with an automobile accident in 1915, and my work was interrupted for two years, which accounts for the hiatus in my case reports. In addition to the nine cases of genuine trifacial neuralgia I did a lot of injections in negro cases by paying them two dollars for the privilege. I also tried cocain injections into the ganglion for operating on alveolar abscesses and other local conditions, and in that way I got a whole lot of practice on living subjects. I think this operation is much more simple and safe than anything else that has been devised. I thank Dr. Patrick for telling me whose method I use, for I did not know, Haertel originally entered through the mouth, but later adopted the technic described in this paper. I think it is much more satisfactory to use a needle with the markings on the needle rather than on the slide. I use a needle of sufficient diameter that the markings can be made with safety. I use 2 c.c. of alcohol, diffusing a portion in and around the sensory root of the nerve and the balance in the corpus of the ganglion as the needle is withdrawn.

Military Medicine and Surgery

THE ROENTGENOLOGIC STUDY OF EMPYEMA CAVITIES

FRANKLIN A. STEVENS, M.D. (Boston)
Lieutenant, M. C., U. S. Army
BILTMORE, N. C.

The surgical treatment of chronic empyema cavities and sinuses should be guided by two laboratory methods: The first, which is relatively the most important, is the bacteriologic examination of the discharge, and the second is a careful roentgenologic study of the existing pneumothorax. A proper correlation of these findings is necessary, however, to obtain satisfactory results; even though the bacteriologic control guides the surgeon in the correct use of neutral solution of chlorinated soda (Dakin's solution) and indicates that the cavity is sufficiently sterile either to allow healing or to permit a radical operation, the knowledge obtained by means of the roentgen ray is an absolute essential. It not only detects abnormalities in the lung tissue, but also demonstrates the size, shape and location of the draining cavity and affords some knowledge of the walls that surround it. This can be accomplished, however, only by a carefully standardized technic which is an accurate means of diagnosis and is at no time detrimental to the patient.

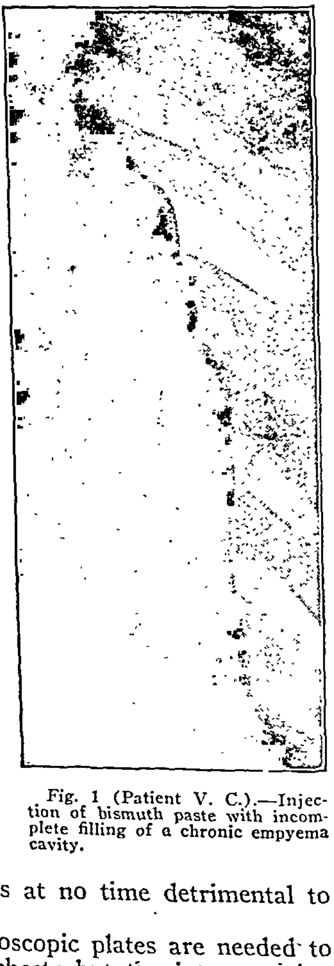
Fig. 1 (Patient V. C.).—Injection of bismuth paste with incomplete filling of a chronic empyema cavity.

It is obvious that stereoscopic plates are needed to locate points within the chest; but the interpretation of the various densities in a draining empyema is a far more difficult problem. Simple large cavities bounded by lung and axillary thoracic wall are easily outlined because the bronchi and their branches, thickened by long continued inflammation, can be sharply traced to the lung border. In cavities of bizarre shape with ramifications between and around the lobes, the delineation is much more difficult and can be accomplished only by completely filling the cavity with some substance opaque to the roentgen ray. A probe may be inserted and either observed in position or withdrawn and measured to estimate the depth of the sinus, but lateral measurements cannot easily be demonstrated in this way. The most practical method is the introduction of either a solution or paste containing some metal or alkaline earth, either as a salt or as a finely divided suspension. Various combinations of these salts and excipients have been used and their technical defects studied.

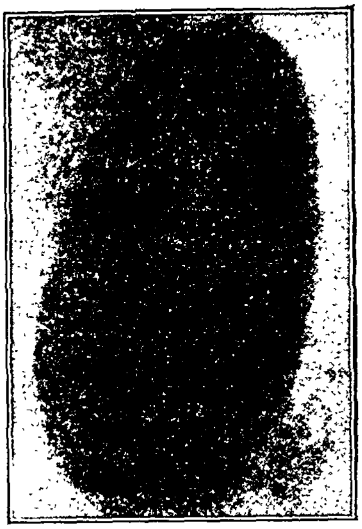
Fig. 2 (Patient V. C.).—Cavity filled with thorium nitrate solution, showing the exact size.

There is no one method that satisfies every requirement. Combinations of petrolatum and waxes as a carrying medium, especially when employed with bismuth, offer such mechanical disadvantages and are attended with such danger to the patient that they should be abandoned for diagnostic purposes. Very frequently the extent and gravity of secondary operations are not indicated because the roentgen-ray injections show the cavities incompletely outlined. Even before this stage of the treatment, the partial filling of the cavity erroneously leads the surgeon to believe that the lung is expanding. This incomplete filling is due to the stiffness of the paste which, as it cools, prevents the escape of air from the deeper recesses of the cavity. In the warm semiliquid state the mass fills only the most dependent part, and if the patient is placed on the well side during the process of injection, only that part of the cavity lying near the vertebral column is filled. Another important objection to the use of bismuth paste is the difficulty encountered in removing it when tortuous sinuses and pockets have been injected, and it is in these cases particularly that chronic bismuth poisoning so frequently results. The injection of even a moderately heavy paste also requires so much pressure that it alters the outline of the cavity, causes pain, and probably impedes the reparative processes. These faults are remedied by the use of fluid mediums.

The solutions in common use are potassium iodid and thorium nitrate. While they are advantageous so far as the filling of the entire sinus or cavity is concerned, alarming results often occur from absorption when they are used in large cavities. Potassium iodid, although easily obtained and prepared, is very irritating, and the pain experienced by the patients prohibits its routine use. Thorium nitrate does not produce such a reaction; but even if chemically pure, chills, fever and hematuria are frequently observed after large quantities have been used. As a result of these observations, it is evident that the proper material should be either a suspension of an insoluble substance or a colloid of some metal. Colloids are frequently difficult to prepare and lack certain advantages to be mentioned later. Although bismuth subnitrate is followed by harmful effects if left in the cavity indefinitely, these are eliminated if it can be removed promptly. To accomplish this end its use can be permitted only in suspension in a liquid medium of sufficient body to maintain its homogeneity for a reasonable length of time. Cottonseed oil, aside from its cheapness, has all these requisite qualities, and a sterile mixture of this oil with 20 per cent. bismuth subnitrate and 3 per cent. powdered acacia is found to meet all requirements.

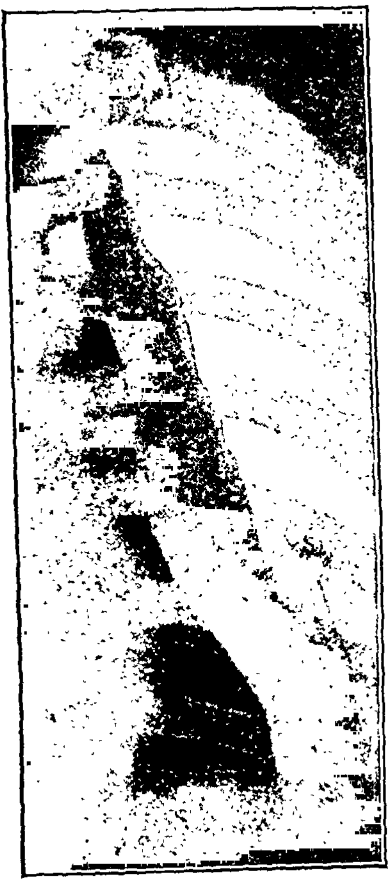
Fig. 3 (Patient M. R. S.).—Bismuth paste injection only partially outlining the cavity.

The filling of an empyema cavity must be done with a knowledge of its general direction, as it is then possible to place the patient with the deepest point of the cavity in the most dependent position. The warm suspension of bismuth and oil is drawn into a sterile syringe and, without touching the wound at any time, is allowed to flow slowly down the walls of the cavity. This effects the gradual displacement of the air from the deeper parts. Since most of the resections have been done posteriorly, the patient is laid across the table with his head and body hanging down, supported by an attendant. The quantity is recorded and more is allowed to run in until air bubbles no longer escape and breathing causes an overflow. Plates taken at this time show the cavity well filled, but the opening through the chest wall is not demonstrated. To overcome this, the wound is tightly packed with narrow strips of gauze previously dipped in bismuth petrolatum paste and sterilized. The patient is carefully raised on the table face down, and the exposures can then be made without the loss of the mixture; the resulting shadow corresponds exactly to the cavity. As far as possible, all patients should be taken in the same position, so that the operator may become accustomed to the same chest markings. The head is turned to the left with the right cheek down; the hands are placed under the thighs with the elbows extending just off the edge of the table. In order that the cavity may not be abnormally distended, it is important that no pressure be used in the injection. Immediately after the first pair of plates is exposed, the tampon is removed, and when the bulk of the bismuth suspension has drained out, a second pair is taken with a thin film of bismuth still adherent over the cavity. This procedure gives an exact quantitative measurement of the contents, and in addition allows the study of the cavity as it exists when not injected. The study of the plates after these injections shows that the shadow is nearly as dense as that obtained with bismuth paste; but because of this density it is difficult to estimate the distance between the lung and the parietal pleura. With the bismuth oil injection, however, this disadvantage is overcome, because sufficient bismuth adheres to the walls in the second pair of plates so that an exact picture of the cavity in all its dimensions can be obtained.

Many injections were made with paste during a period of three months in the treatment of more than 100 cases. On closely viewing the plates at a later time it was discovered that many of them were very misleading. Most of the cavities had apparently decreased very much in size, but on careful examination the walls of the sinuses could be traced some distance beyond the shadow of the injected bismuth paste. Because of this discrepancy they were again roentgenographed with thorium, and as was expected, it was found that it was impossible to obtain a correct outline unless the cavities were completely filled. In practically every case in which the cavity was of any size or depth, the cubic contents were far in excess of that anticipated, and the roentgenograms even showed that it was unsafe to attempt to estimate the size and shape of these wounds unless they were completely filled. Some had been reported as "partially injected pneumothoraces," evidence which was of little value to the surgeon.

Figures 1 and 2 were made at intervals of four days and illustrate the marked discrepancy between a paste and liquid medium. The patient had a chill with marked hematuria for a few days following because of the thorium employed, and it was for this reason that an oil-bismuth suspension was substituted in all subsequent work.

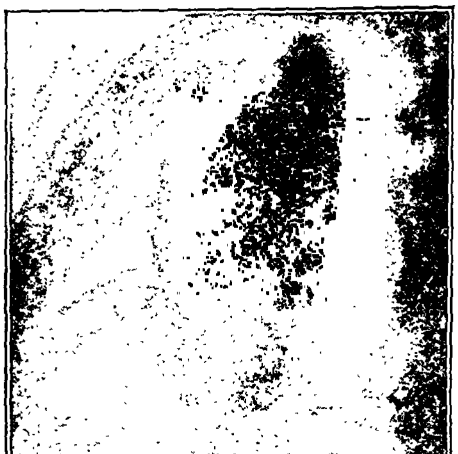
Fig. 4 (Patient M. R. S.).—Cavity completely outlined with bismuth oil injection.

Figures 3, 4 and 5 were taken in a second case at an interval of four days. The paste has been forced along the vertebral portion of the cavity, and in the upper part there is a large irregularly shaped accumulation of air that has not escaped. The bismuth oil injection completely fills the wound, revealing a cavity so shallow that one can see through it with ease. In Figure 5, taken immediately after the oil was removed, the outline is still very definite, and stereoscopically the lung and pleura are found lying in close approximation.

There is no retention. With the knowledge that 30 c.c. of the mixture were required in this injection, a very definite idea of such a cavity is obtained.

An attempt was made to discover whether the presence of this fluid, even under no pressure, caused a distortion. A series of plates was made in the same manner as the three just mentioned. Those made with paste were obviously incorrect. On observing the sinuses filled with oil and bismuth it was noted that although they conformed to the curvature of the chest wall, many were abnormally far from the ribs. This is frequently observed in chests with a very thick parietal pleura. The third pair in each of the series illustrated the collapsed sinus after the oil had escaped. There was sufficient bismuth still adherent to give a definite outline, and the decrease in size was evident, demonstrating the slight distention of the cavity with the injected mass in place. Difficulty was experienced in securing photographs taken in the same position. Since the ventral prone position has been used in the oil injection, it was not always possible to select similar positions from among the previously injected bismuth plates.

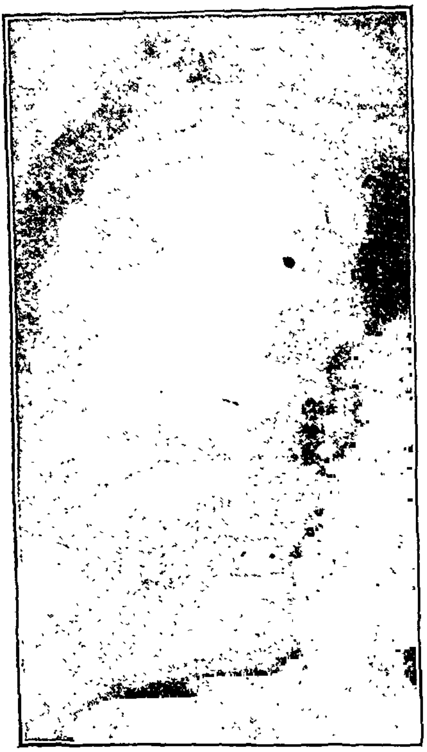

Fig. 5 (Patient M. R. S.).—Cavity sharply outlined after the oil and bismuth have escaped.

Tax on Child Labor Suggested.—That an exorbitant tax should be levied on merchandise or any production of child labor as the only logical method of eliminating the evil was the chief point brought out in a rousing address by Owen R. Lovejoy, general secretary of the National Child Labor Commission, at the opening session of the fifty-first annual meeting of the Maryland State Teachers' Association, which convened, November 29, in Baltimore; while a federal, centralized educational system discussed by Dr. William Chandler Bagley, professor of education at the Teachers' College, Columbia University, also struck a responsive note among the hundreds of educators present. In view of the fact that the results of the recent selective draft classification and examinations disclosed that 750,000 persons, all male, were illiterate, Dr. Lovejoy laid stress on the fact that child labor is largely responsible for that deplorable condition. These figures do not include the illiterate females in this country. Although the issue has not yet been adopted by the association, Dr. Rozell Berryman, Baltimore, treasurer, said that it conformed with the unanimous view of the teachers, and that it will ultimately be adopted in the resolutions. This means that a concerted effort will be made to that end in having such tariffs and taxes apply. A national system of education as is in vogue in England and France was strongly advocated by Dr. Bagley, who declared that only in that way could any comprehensive and effective system be evolved.

THE EAR IN "STUNT" FLYING*

LEWIS FISHER, M.D. (Philadelphia)
Major, M. C., U. S. Army
AND
H. W. LYMAN, M.D. (St. Louis)
Captain, M. C., U. S. Army
MINEOLA, L. I., N. Y.

Crashes that occur during "stunt" flying are usually the result of something having gone wrong with the pilot. Hence, it is a pertinent matter for medical investigation. Just what this something is, is not always clear. Poor judgment, a sense of bravado, carelessness, "stunting" at low altitudes, and sudden faintness are among the reasons generally offered in explanation of these accidents. Direct testimony of the pilot is not always available, since many of the crashes result fatally. Neither are pilots who have crashed and survived always able to give a clear and concise account or analysis of the causes of the accident.

Underlying them all, however, there runs a story of momentary loss of faculties, resulting in a manipulation of controls without deliberate judgment. Most accounts of crashes read, "The pilot went into a tail spin and failed to come out." The story of Lieut. J. M. M. is quite typical of those collected by this department. While flying, he went into a tail spin. This produced such overpowering dizziness that, not knowing what he was doing or why, he grabbed the "joy stick" and pushed it forcibly over and threw himself into another tail spin in the opposite direction. Before he could come out of this he crashed.

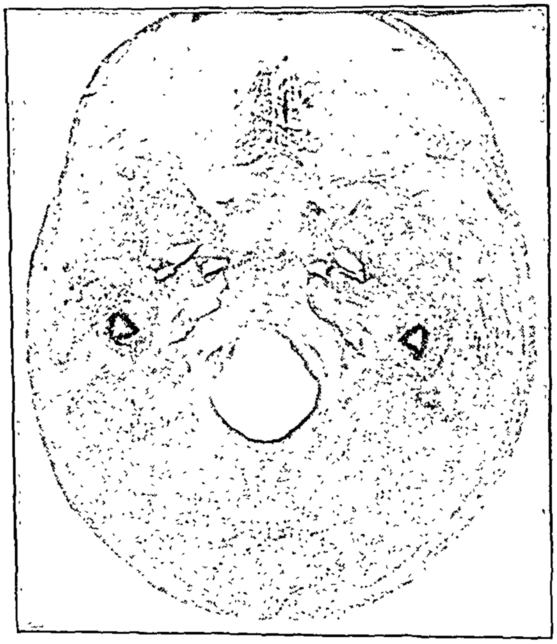

Fig. 1.—Base of skull from above, showing semicircular canals in situ.

So many of the accounts of crashes given by pilots who do survive emphasize dizziness (or vertigo) that the organ responsible for dizziness when an individual is whirled around, namely, the ear, was necessarily made the subject of investigation by the otologic department of the Medical Research Laboratory at Mineola. Experiments which involved the whirling of individuals point conclusively to the fact that stunt flying is essentially an ear problem.

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* From the Department of Otology, Medical Research Laboratory, Hazelhurst Field, Mineola.

By visualizing the position of the pilot as he is whirled in the various stunt evolutions, we found that by reproducing a similar whirling in the apparatus it was possible to simulate all the subjective effects of the actual stunt.

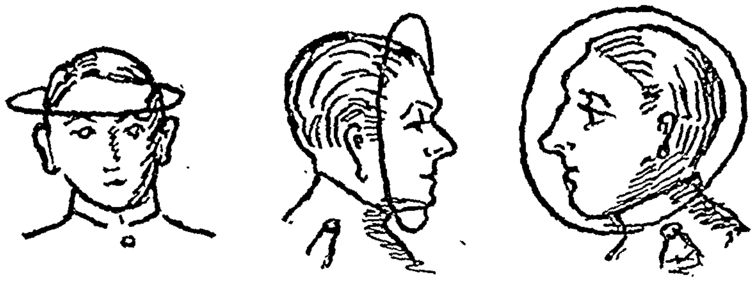

Fig. 2.—Three cardinal planes of vertigo: horizontal, frontal and sagittal.

Lieut. J. F. D. (150 hours in the air) was placed in a certain position in the apparatus and whirled. He volunteered the information that his sensations were identical with those experienced when coming out of a tail spin. When placed in the apparatus in a certain different position and whirled, he stated that his sensations were those experienced when coming out of a tight spiral. Lieut. W. E. R., an experienced pilot, when placed in the apparatus in the same position as Lieut. D.'s first experiment, made the statement that his sensations were identical with those of his predecessor, saying, "That is exactly like coming out of a tail spin." When placed in another position and whirled, he said, "Now I feel like coming out of a loop." These facts were confirmed by similar experiments on other aviators.

Since being whirled in an aeroplane produces effects identical with those resulting from being whirled in a laboratory device, such as the turning chair, or other forms of apparatus designed for that purpose, we are furnished with an accurate and convenient means of studying the various vertigo effects of ear stimulation produced by evolutions in the air, and the deductions derived from this experimental stimulation are true and applicable to stunt flying. The facts gleaned were so exactly in accordance with our knowledge of the ear as a "motion-sensing mechanism" that they were simply corroborative of certain well known otologic principles. Now what are these established facts or principles?

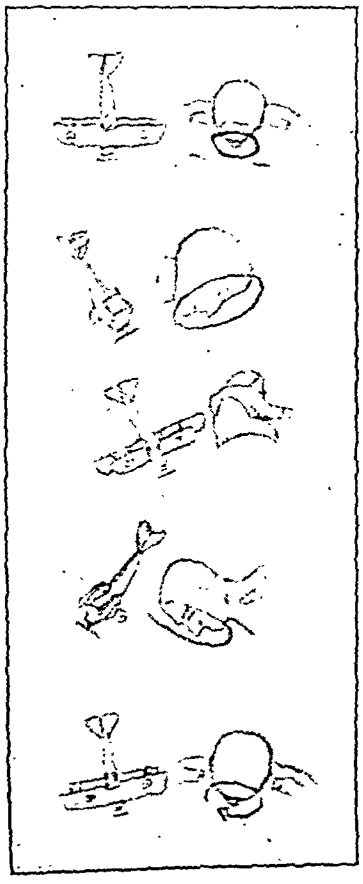

Fig. 3.—Spinning nose dive.

1. In each ear we have three semicircular tubes, or canals, containing fluid, so placed that they are at right angles with one another (Fig. 1). Because of this arrangement, no change of position of the individual is possible without producing some movement of fluid in one or more of the canals. Movement of the fluid in these canals sends messages to the brain which are there interpreted as body movement. Hence, the ears constitute the motion-sensing organs of the body.

2. When an individual is whirled, be it in the laboratory or in an aeroplane, there is produced a circulation of this fluid in certain definite canals and planes. Now, if the turning is suddenly altered or stopped, or if the aeroplane comes out of a rotating maneuver, the fluid in the canals continues to move in its former plane by sheer force of its momentum. The circulation of the fluid by momentum is interpreted by the brain as body movement; but not being in accordance with fact, the body having ceased to revolve, it constitutes vertigo or dizziness, and is disturbing to the individual.

Labyrinthine vertigo, therefore, is a false sensation of motion similar to the visual illusion of motion observed when one is watching a moving train from the window of a stationary coach, both being unavoidable phenomena of normal special sense mechanisms which, however, the subject easily learns to disregard.

One must not fall into the error, however, of thinking that the lack of a normal ear mechanism would be advantageous to the flier, because of the immunity to vertigo which this condition would confer. The absence of such an essential organ as a motion-perceiving apparatus is too great a handicap to the man traveling in an "air medium" to justify him even in thinking for a moment that he could dispense with it for the sole benefit of a vertigo immunity, especially since the normal individual can acquire such an immunity without much difficulty.

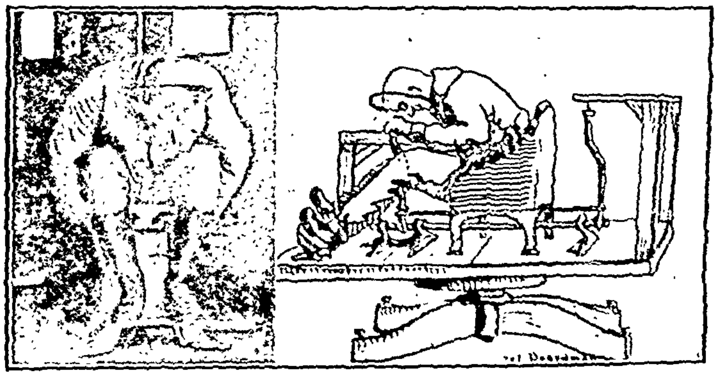

Fig. 4.—Position in turning chair to simulate spinning nose dive.

VERTIGO EFFECTS OF EAR STIMULATION LEARNED IN THE AIR

1. There are three cardinal planes of vertigo: horizontal, frontal and sagittal (Fig. 2).

2. A sense of being turned in a horizontal plane—horizontal vertigo—is less disturbing than a sense of being whirled in a vertical plane—vertical vertigo. Each semicircular canal, if stimulated, produces a vertigo in its own plane. Therefore, with the individual in an upright position, stimulation of the horizontal canal is much less disturbing than stimulation of the vertical canals.

3. When a disturbing or disabling vertigo is induced in the vertical semicircular canals, the effects can be greatly ameliorated by bringing the vertical canals in a horizontal position or plane, which can readily be done by bringing the head forward.

4. All types of vertigo, no matter how induced, are made less and less disturbing by continual repetition.

PRACTICAL APPLICATION OF VERTIGO STUDY TO STUNT FLYING

Let us consider how the knowledge of the various effects of vertigo gained in the laboratory can be correlated and applied to various stunts.

Spinning Nose Dive.—In this maneuver, the aviator, face downward, is whirled about an axis with his head and body practically parallel to the ground, as shown in Figure 3. In this position there is a stimulation of the vertical semicircular canals in a frontal plane, corresponding to turning in the chair in the position shown in Figure 4. When he "comes out" of the spin, the plane of vertigo which until now has been parallel to the ground becomes vertical in a frontal plane, that is, from side to side, so that instead of feeling that he is turning horizontally he feels that he is whirling in an up and down plane. This being very disturbing, he is apt to lose himself momentarily and attempt to correct this illusionary movement and so throw himself into another tail spin in the opposite direction. When the same experience is carried out in the chair, that is, when he is turning with his head forward simulating his position during the tail spin, and attempts to sit erect, he similarly changes the horizontal vertigo, with which he started, into a sensation of whirling in an up and down plane. In attempting to correct this false impression, he throws his body to one side or the other with such violence that unless caught by the examiner he would fall to the floor. It is easy to imagine what havoc would be raised with the controls of an aeroplane under similar conditions. The obvious remedy in both cases is to keep the head down as it was in the beginning so that the vertigo remains in the horizontal plane.

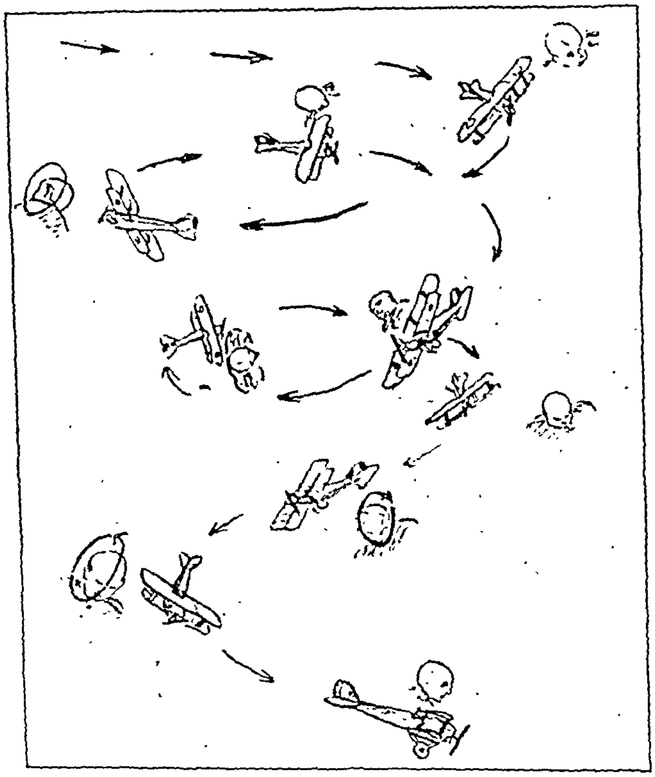

Fig. 5.—Tight spiral.

Tight Spiral.—In this maneuver (Fig. 5) the aviator is whirled about an axis with his head and body practically parallel with the ground but facing the horizon. The stimulation occurs in the vertical canals but in a plane practically parallel with the ground as long as the spiral lasts. When he comes out, however, the plane of vertigo, horizontal until now, becomes vertical in a sagittal (from before backward) plane, so that he feels himself pitching forward or backward and may again meet disaster in attempting to correct for this illusion.

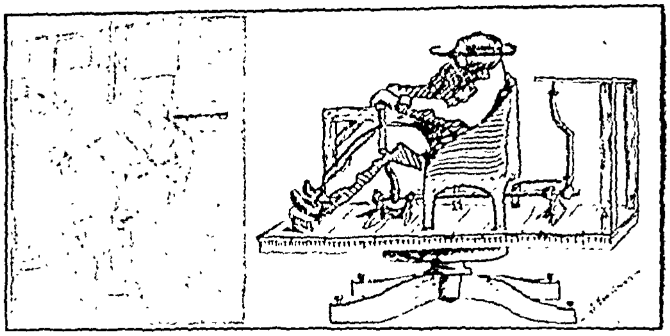

Fig. 6.—Position in turning chair to simulate tight spiral.

In the turning chair this maneuver can be simulated by turning the individual with his head sharply inclined over the shoulder (Fig. 6).

The obvious remedy for the aviator in this case is to tilt his head sharply to one side when coming out of the spiral, since by so doing he will prevent the vertigo from assuming an up and down whirl.

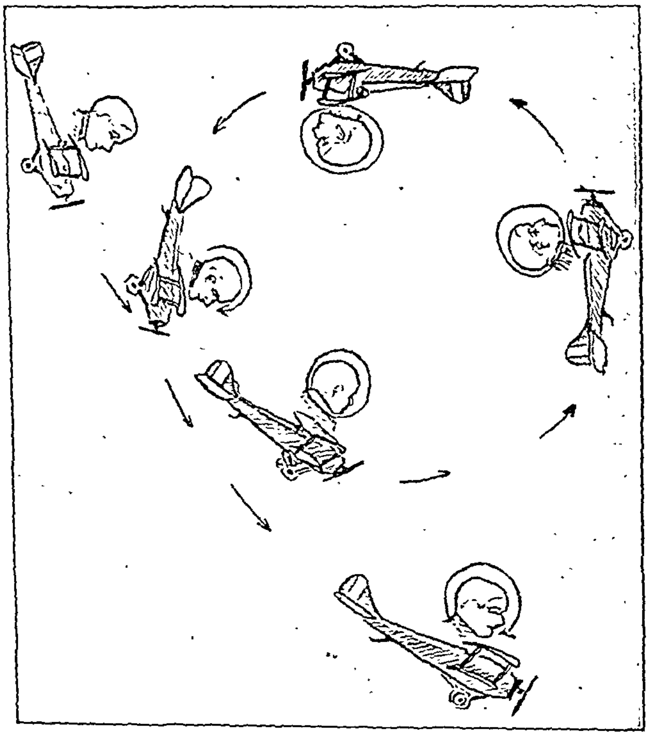

Fig. 7.—Loop.

Loop.—In this stunt, as shown in Figure 7, the vertical canals are stimulated in the sagittal plane (as in the spiral) but to a lesser degree. The correction is accomplished by tilting the head sharply over one shoulder (the position shown in Figure 6).

Immelmann Turn.—In this evolution, as shown in Figure 8, we have a compound maneuver. During the first or loop portion, the vertical canals are stimulated in the sagittal plane, followed in the second part by a stimulation of the vertical canals in the frontal plane. The effect of the first portion is lost during the remainder of the stunt, so that on emerging the aviator has only to deal with the vertigo induced by the last part, namely, the vertigo on the frontal plane. The obvious correction is to throw the head forward while "coming out." In a similar manner the vertigo induced by the "barrel roll," "falling leaf," "wing over," and other maneuvers can be readily analyzed.

It is, of course, true that the experienced stunt flier is not, as a rule, upset by vertigo induced by these stunts because of the many hours of practice he has had; but no matter how well trained and experienced he may be, he may occasionally find himself, especially in actual combat, doing whirling in a greater amount and at a greater rate of speed than his training has prepared him for, and an understanding of these principles might be the means of saving his life. As a matter of fact, stunt fliers develop instinctively certain maneuvers that neutralize the disabling effects of vertigo; thus one flier found by practical experience that by leaning as far forward as possible, so that his head was practically inverted, a tail spin gave him practically no disabling vertigo. Another found that going into a straight nose dive immediately following a tail spin saved him from any uncomfortable dizziness.

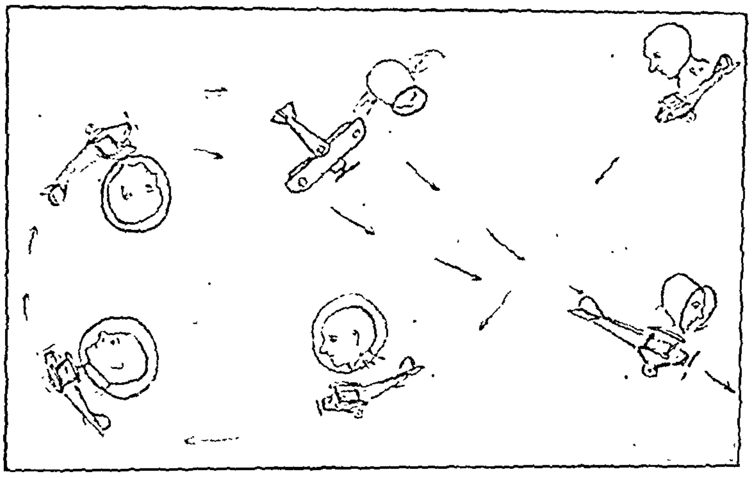

Fig. 8.—Immelmann turn. The circles indicate the plane of vertigo —sagittal first, then frontal.

These fliers have instinctively adopted means which at all times kept the vertigo in a horizontal plane—procedures based on sound otologic principles. Experienced aviators, on being put through the various stunts in the laboratory, when shown how easily the effects of vertigo are neutralized by certain changes in the position of the head, are of the unanimous opinion that such knowledge is of the greatest practical value, especially in stunting. It is obvious that to the less experienced this knowledge is of even greater importance.

The greatest usefulness of the knowledge that stunting is an ear problem lies in the fact that the flier may be educated to disregard the vertigo effects of his stunts in the laboratory instead of among the clouds, and without danger acquire a tolerance to evolutions to a degree impossible in the air. This can be accomplished by the use of an otologic apparatus known as the orientator. In its construction it is like the cockpit of an aeroplane suspended in concentric rings, after the manner of a ship's compass. The movements (or changes of position) which are possible in all directions except actual forward progression are governed by the individual seated in the machine, using a set of controls resembling those of an aeroplane. Strapped in this machine, he is enabled to execute any evolution, such as the loop, spiral, etc., at any desired speed for any number of turns and thus acquire in absolute safety a tolerance for the disturbing effects of vertigo induced by these evolutions, instead of acquiring this tolerance and knowledge by actual flying with its consequent crashes and possible loss of life. In addition, it will enable him to adapt himself to new and most unusual conditions. He will learn to orientate himself in new and rapidly changing positions of the body, and to perform properly the complicated acts necessary to control an aeroplane while flying with his head down, etc., which entails an entirely reversed relation to external objects, a condition in itself most disturbing and pregnant with possibilities of disaster.

STATIC DEFECTS OF THE FEET

A METHOD OF ACCURATE DIAGNOSIS AND A TREATMENT OF PROVED VALUE IN THE ARMY

EDWARD A. RICH, M.D.
Major, M. C., U. S. Army; Supervising Orthopedic Surgeon
WASHINGTON, D. C.

The underlying principle in all satisfactory treatment of the common static defects of the feet is that of restoring weight-bearing to those parts of the feet to which weight-bearing naturally belongs. All other forms of treatment of the longitudinal and transverse arch defects, all treatments of foot pronations or ankle valgus and the neuralgias of the forefoot that do not rigorously enforce this principle, are merely forms of treatment that support or palliate. Real cures of the static defects depend basically on establishment of the principle, first by artificial, then by natural, means.

There are two modes of approach that can be made use of to reestablish permanently the normal foot functions and the enforced use of the normal weight-bearing areas. First, there are the surgical and mechanical measures which in a valuable way make use of mechanics and force at efforts of reconstruction. These various procedures, valuable and important as they may be in civil practice, have little place in the present discussion. Early in the war, official orders rightly removed the knife from the hand of the orthopedic surgeon in the training camp. Second, there is that mode of approach which, recognizing the abnormality of the foot, determines on shoe alterations intended either to correct the statics of wrong weight-bearing or to render the normal shoe "abnormal" to compensate for the foot abnormality. The latter method is merely the forgotten aims of the old-fashioned horseshoer or the lost arts of the obsolete shoemaker. Further, several of the static foot defects, such as talipes valgus, are congenital affairs that tend to yield toward the normal on the application of the correct shoe mechanics. This paper is an attempt to emphasize the latter therapeutic phase.

To look at this mode of approach in a popular way: A certain shoe, properly selected, can be considered a normal covering for a normal foot. If a foot, however, is deformed, in the sense of being statically or organically abnormal, a standard or stock shoe does not "make a fit." *An abnormal foot demands an abnormal or nonstandard shoe.* Self-evident as the fact is, people have been crowding abnormal metatarsal defects, flat feet, cavus and pronated feet into normal store shoes. It is the same system as is the use of store spectacles or as would be the use of stock false teeth.

It does not seem feasible to revive shoemaking from individual lasts. However, to meet the great demand, the stock shoe has been a matter of long and careful study, with a view of remodeling. Civilian orthopedic surgeons and military boards have long given the matter of shoe alterations diligent attention, until today it can truthfully be said that the proper stock shoe can be so altered in its construction that it can be made to compensate for almost every abnormality common to the static defect.

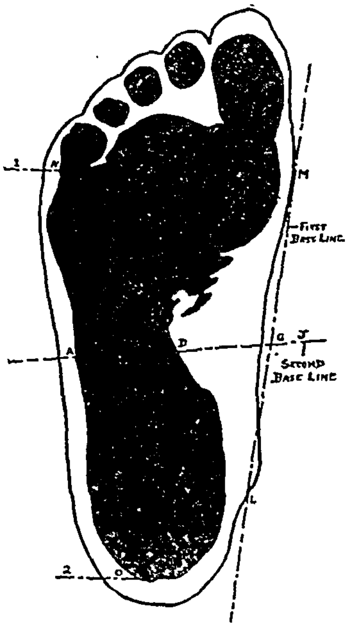

Fig. 1.—Pedograph of normal foot: Normal impression of weight-bearing area surrounded by contour line of the upper foot. First standard base line (LM) connects a fixed point posterior to the inner malleolus (L), and the metatarsal-phalangeal prominence (M). Second standard base line (AG) is drawn midway between Planes 1 and 2 and at right angles to the axis of the foot. Supplemental data: Feiss line, one-half inch; normal subcutaneous fat. This and the following illustrations were prepared by the Anatomical Art Department of the Army Medical Museum.

ACCURATE DIAGNOSES OF STATIC FOOT DEFECTS

The diagnosis of the static foot defects has always been largely made by guess. Diagnostic aids have not been commonly sought or encouraged. Many surgeons, uninterested in the foot subjects, have jumped at conclusions from mere inspection, with the usual result that treatments applied have been misfits. To diagnose and classify the foot defects without graphic aids is exactly on a par with the attempt at diagnosis and classification of the chest derangements without a stethoscope.

It is a lamentable fact that great masses of soldiers appearing in military orthopedic clinics showing by pedograph an ankle valgus, popularly termed pronated foot, prove on accurate test to have cavus with often abnormally high longitudinal arches; but their histories show often that previous civilian treatment had for its aim the restoration of a fallen arch. There seems to be a vague misunderstanding of the characteristics of the static foot entities.

PEDOGRAPH AND SCAPHOID SCALE

Our two infallible aids in diagnosis are the pedograph and the arch scale for the scaphoid. The two are supplemental; neither is of much value of itself.

The pedograph is merely an imprint on paper of the weight-bearing surface of the feet, surrounded by a pencil mark of the contour of the upper foot (Fig. 1). The pencil so describing this contour line is aways held perpendicularly to the drawing paper (Fig 2). This *impression of the weight-bearing areas of the feet,* made in the standing position, with the weight equally distributed on the two feet, can be made in many ways. It can be taken with ink in the usual manner for finger prints. But by far the better way is to use the ingredients of ink in two separate solutions, first coating the plantar surface of the feet with an iron solution that scarcely stains the skin; making the impression (drawing in the foot contour), and then coating the impression with tannic acid, turning it in a few moments to a jet black. The solutions commonly in use are:

Iron Solution	
Tincture of ferric chlorid	45
Glycerin	5
Commercial alcohol	50

Tannic Acid Solution	
Tannic acid by weight	10
Commercial alcohol	90

The foot impression portrays in an unmistakable way several general facts other than those pertaining to the foot itself. There are portrayed general constitutional and assimilative data, indications of character of a positive and negative nature, and more important unerring lateral lines bespeaking station, motor disturbances and ataxias (Fig. 3).

The addition of two straight lines to the pedograph makes its interpretation very simple. First is the first base line (*Fig. 1* LM), drawn with a ruler along the inner foot contour, connecting the point L or that position representing the point on the contour line immediately posterior to the inner malleolus, and the point M, a position on the same contour line registering the prominence of the metatarsal-great toe joint. (In the case of gross enlargements of this joint, allowance is made and the point M is assumed within the contour line.)

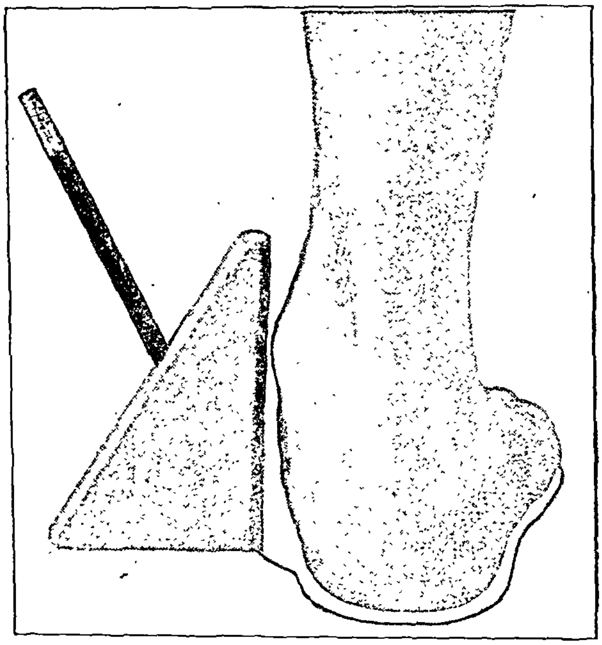

Fig. 2.—Perpendicularly drawn contour line of upper foot. "Travis block" is serviceable in maintaining a perpendicular while describing the contour line.

The next line added is the second base line. This line, AJ, is drawn at right angles to the axis of the foot, and in a plane half the distance from the base of the little toe (N) to the extension of the heel impression (O). The two base lines intersect at G.

SCAPHOID SCALE

The supplemental data for the proper interpretation of the pedograph pertain to the findings as to the actual height, by measurements of the lateral arch, as determined by the position of the lower border of the inner surface of the scaphoid bone. A line, sometimes called Feiss' line, is mapped out with a thin straight-edge, preferably a short machinist's rule, connecting the posterior inferior aspect of the internal malleolus and the distal end of the first metatarsal, plantar surface (Figs. 4 and 5). The scaphoid, which will be remembered as the keystone of the lateral arch of the foot, is found easily by continuing directly downward in the front line of the shin to a point in front of the inner malleolus. The lower rounded border of the scaphoid bone is carefully described by a mark on the skin while the patient stands bearing weight equally on the two feet. In normal feet this point on the scaphoid is about one-half inch below the line described. In all cases of cavus this point is found above the normal position, and is often to be found above the mapped outline. While in flatfoot, fallen longitudinal arches, the point may be 1 inch or 1½ inches below the line. When found, the position of the point on the scaphoid is thus placed on a corner of the pedograph: Feiss, ⅞; Feiss, 0; Feiss, —¼, etc.

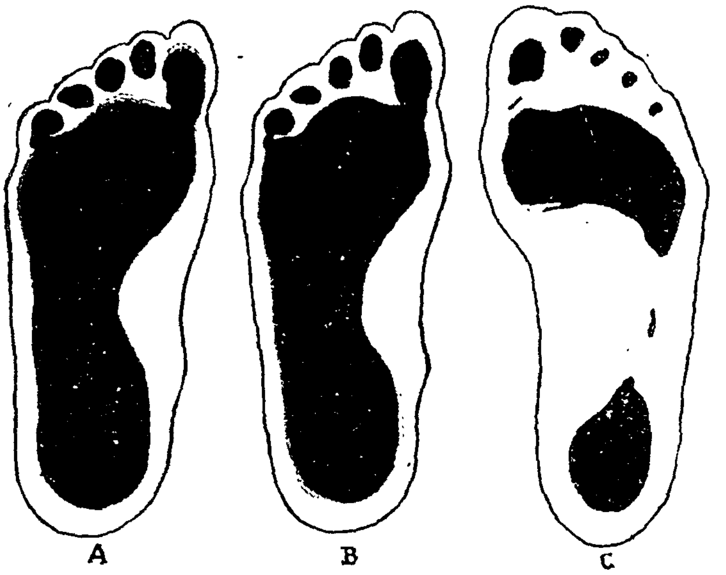

Fig. 3.—Postural and assimilative data recorded by pedograph: *A,* posture in alcoholic intoxication: forefoot blur; *B,* posture in ataxias: blur on lateral aspects of impression; *C,* impression in extreme emaciation: normal arch.

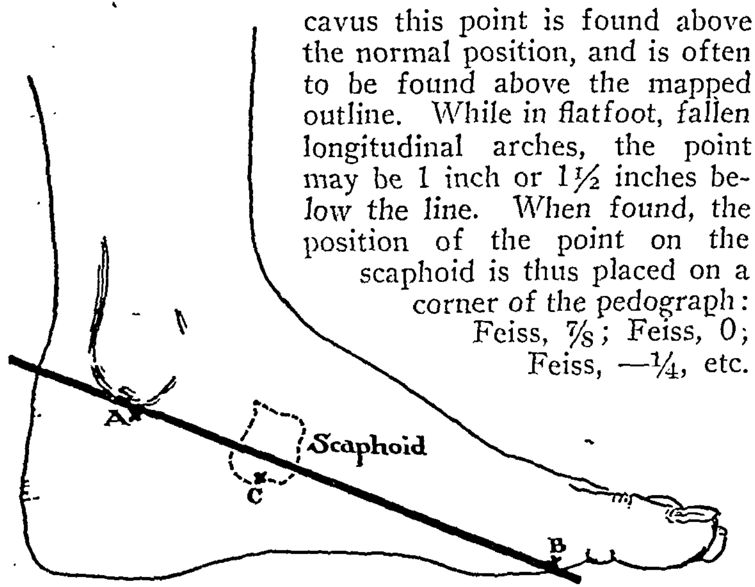

Fig. 4.—Arch scale for the height of scaphoid; sometimes the line is called the Feiss line. Normally the tubercle (*C*) should measure about one-half inch below the Feiss line.

Again in young persons a notation must be made as to the presence of the juvenile fat pad under the lateral arch, should such persist. Sometimes this fat pad does persist even into the thirties. Some individuals are abundantly blessed with very thick adipose tissue under this arch. It is true, as would be surmised, that fatty tissues deposited beneath the arch might make considerable change in the pedographic picture. They might even produce the picture of a severe flatfoot. Brief mention in such cases should be made on the pedograph in such notations as "Fat pad present" or "Thick adipose tissue present."

READING THE PEDOGRAPH

The Normal Foot.—It is found that average normal weight-bearing gives us an impression which in width extends along the second base line about one-half the distance from the outer border of the pedographic impression (*A*) to the intersection with the first base line at *G,* or from point *A* to point *D* (Figs. 1 and 6). Variations about one-fourth inch either way are normal.

Fallen Longitudinal Arch.—Various degrees of falling of the longitudinal arch produce pedographic impressions entirely over to the first base line (Fig. 7). Such would be extreme, or third degree. Therefore we have dogmatically divided that part of the second base line between *D* and *G* into three equal parts (*D-E; E-F; F-G*), and empirically we find that feet producing impressions widening out to the neighborhood of *E* fall into a class of first degree flatfoot (Fig. 8). In the same way we discover that feet producing impressions widening to point *F* fall into a class of second degree flatfoot. Then any impression extending beyond the point *F* classes the feet as having third degree flatfoot. It must always be remembered, however, that this picture of the widening of the plantar impression must be read with due attention to the findings that are recorded on the margins—the height of the scaphoid and fat findings. Further, attention must always be first directed toward pictorial signs of valgus at the ankle as recorded by the contour line of the foot, an important point to be taken up below (Figs. 2 and 13).

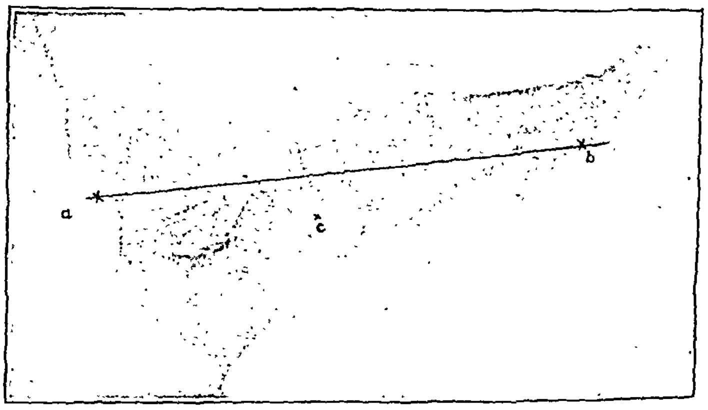

Fig. 5.—Same line as in Figure 4 drawn on roentgenogram.

Cavus, or Raised Longitudinal Arch.—In much the same way cavus is determined. When daylight can be seen beneath the weight-bearing foot we speak of third degree cavus (Fig 9). So the space on the pedograph from *A* to *D* is divided also into three equal parts (*A-B; B-C; C-D*). Should a narrowed impression of a foot reach only to the point *C,* we would have a first degree cavus (Fig. 10). Should it reach only the neighborhood of point *B,* we would have second degree cavus (Fig. 11). And, as stated, with less impression still and light showing through, we have third degree cavus (Fig. 9).

Ankle Valgus and Some Considerations of the Contour Line.—Before considering that most common defect of ankle valgus, it will be necessary to premise with a statement or two regarding the contour line. This line records on the pedograph the integrity of the upper foot, the position of the main ankle and other tarsal joints on weight-bearing. The pencil making the contour line is always held perpendicularly. Contour lines are absolutely without value unless this standard position is maintained. To assist the worker, the Travis block is of great value. Figure 12 shows the level of the upper foot that the perpendicular pencil records as it encircles the foot, making the contour line.

Inspection of the pedograph of the normal foot reveals the fact that the inner contour line as it courses between the points *L* and *M* always passes entirely within, or to the impression side of the first base line, except where it bulges out around the inner malleolus (Figs. 1 and 6).

This inner contour line now assumes considerable importance.

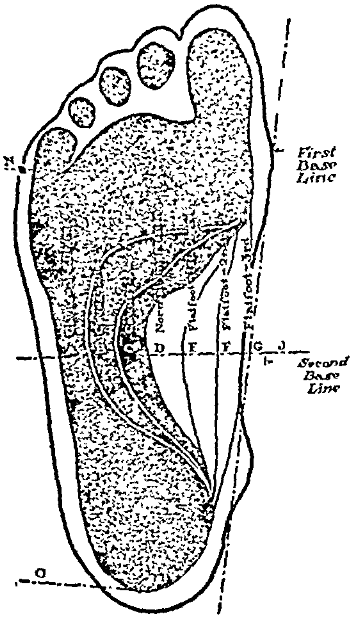

Fig. 6.—Scheme of pedograph interpretation: On second base line the point *D* (half the distance from *A* to *G*) marks the width of the normal impression. The space *AD* is subdivided into three sections to represent the impressions of the three degrees of cavus. The space *DG* is likewise subdivided to represent impressions of the three degrees of flatfoot.

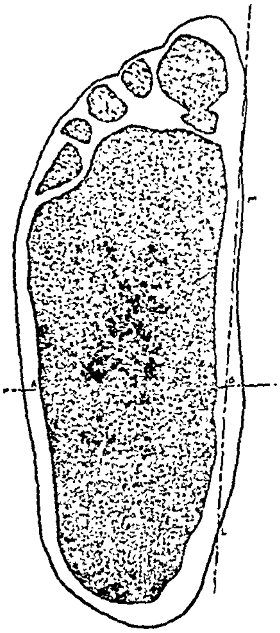

Fig. 7.—Pedograph of third degree flatfoot (with pronation). Extreme falling of the longitudinal arch. Illustrates the common compound condition of flatfoot and ankle valgus, or foot pronation. Feiss line, 1⅝ inches. No fat pad.

As the foot pronates, or assumes a position of ankle valgus—a matter which, contrary to much didactic teaching, takes place largely in the astragalotibial joint—the inner contour line registering the statics of the upper foot falls farther and farther outward toward and often well outside the first base line. The extreme types of true ankle valgus give us a contour line a good half inch to the outside, at the plane of the second base line (*J*, Fig. 13). Such a type of valgus is of third degree. In first and second degree valgus, contour lines of less deviation are recorded (*H* and *I*, Fig. 13).

The term "ankle valgus" is used advisedly. "Genu valgus" and "hallux valgus" have their place in nomenclature, so it is logical and right to encourage "ankle valgus" for a homologous process at the ankle. As intimated above, some writers have advanced theories regarding the etiology of so-called pronation. It is asserted that most of the eversion of the foot takes place in certain minor tarsal joints. A previously described roentgenographic study of a hundred cases of ankle valgus in weight-bearing postures convinces me that fully 80 per cent. of the foot valgus is due to abnormal play in the main ankle joint. The causes for so large a percentage of ankle valgus among the statics of soldiers' feet is easily explained. First, one of the commonest defects in childhood is simple valgus—turning in of the ankle. As most of these cases are untreated, they persist. Again, the sprains of the ankle are most frequently injuries of the internal lateral

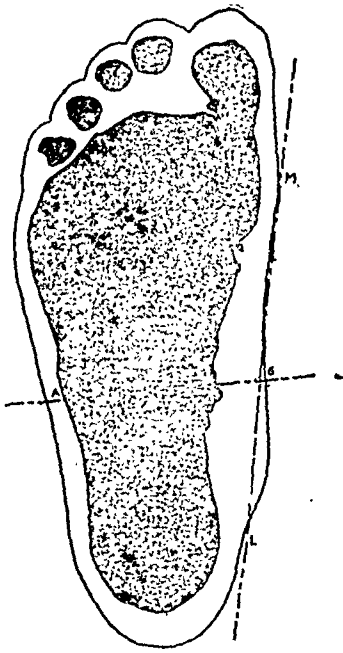

Fig. 8.—Pedograph of first degree flatfoot. Supplemental data: Feiss line, 1⅛ inches. Thick subcutaneous fat.

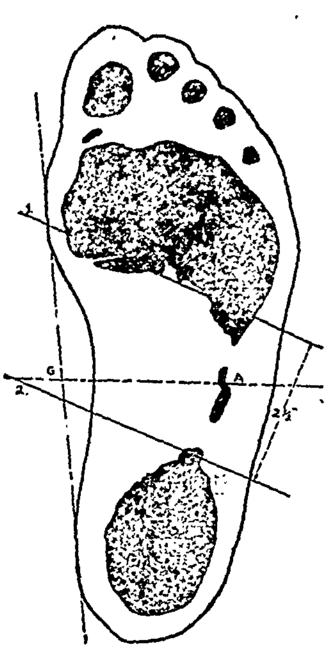

Fig. 9.—Pedograph of third degree cavus. Space of 2½ inches of nonweight-bearing between Planes 1 and 2. Feiss line, minus one-fourth inch.

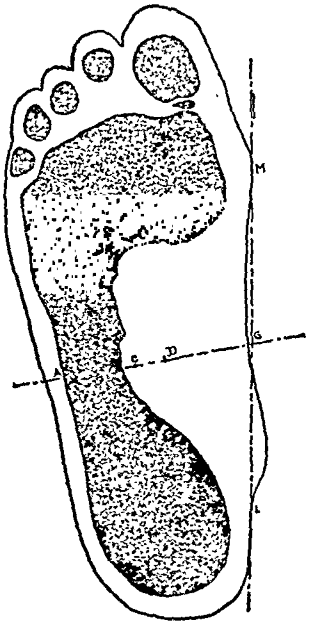

Fig. 10.—Pedograph of first degree cavus. Feiss line, 0. No fat pad.

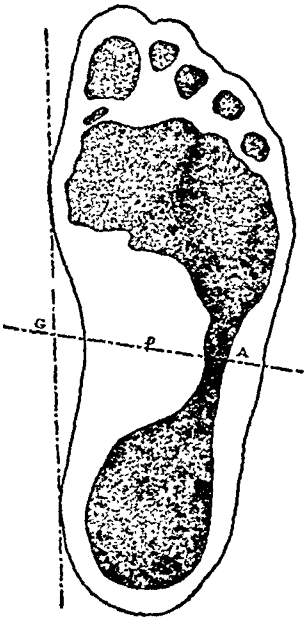

Fig. 11.—Pedograph of second degree cavus. Feiss line, 0.

ligament. Ligamentous repair in so active a joint is often, and probably usually, incomplete, leaving as a sequela a tendency to valgus. Orthopedic surgeons who work intelligently on masses of soldiers in training camps express surprise at the percentage of simple ankle valgus—with no longitudinal arch descent—to the cases of flatfoot. The ratio is as 5 : 1½.

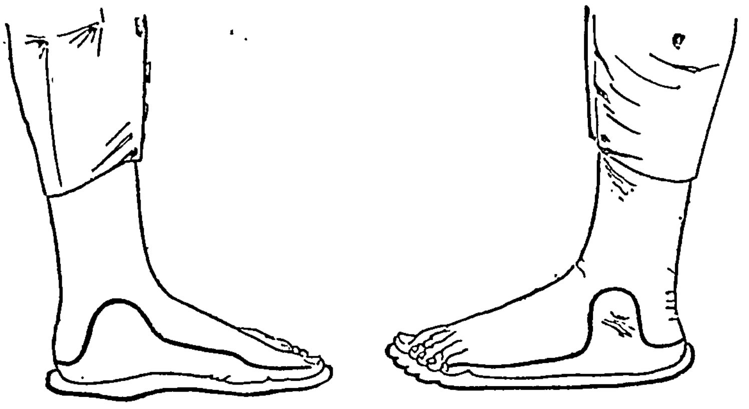

Fig. 12.—Planes of the upper foot recorded by the perpendicularly drawn contour line, shown by black markings on foot.

The pedograph furnishes truthful and accurate data on which to render scientific diagnosis. It is the best guide we have to the intelligent treatment of all the static foot defects.

RESTORING WEIGHT-BEARING WHERE IT BELONGS

We are now in a position to consider the matter of treatment by way of shoe alterations or adjustments as viewed by the discovered pathologic condition. Remembering our aim of restoring weight-bearing to those parts of the foot to which it belongs, let us first consider the most simple condition of cavus.

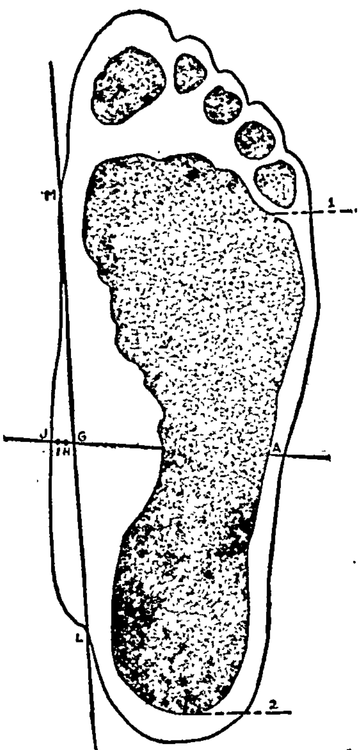

Fig. 13.—Ankle valgus, second degree. Feiss line, 1 inch. No fat present. Note that the inner contour line of the upper foot passes outside the first base line between *L* and *M*.

Cavus.—A third degree cavus gives us such a pedograph as Figure 9. In the center of the foot between Planes 1 and 2 of the figure there can be considered a normal weight-bearing area of several square inches in extent that is not, in the hollow foot wearing a common shoe, bearing any burden whatsoever. Such a cavus is often troublesome because of the shortened ligamentous plantar structures, and because the reduced weight-bearing areas of the dorsum must compensate and bear increased burdens of weight. This type of foot is exceedingly common among our Southern troops, especially from the delta states. Such a foot always is potentially a weak foot. Common shoes never fit it. Fortunately, however, they can easily be so altered that they will be made to fit—the shank and sole can be built up with leather until weight is again distributed evenly on the intended weight-bearing areas. This alteration, the insertion of the rocker shank (Fig. 14), is made by splitting the two layers of the shank and adjacent sole of the shoe, through and through, and the nailing in of a wide double wedge of leather of one or two thicknesses as needed, and of extent wide enough to span the arch of the cavus. The exact width is determined by measurements on the pedograph. As indicated in Figure 9, the approximate width of that particular rocker shank would be 2½ inches. If prepared rocker shanks are on hand, the alterations for a pair of shoes can be made in about eight minutes.

Alterations for Ankle Valgus.—With the same reasoning we approach the treatment of ankle valgus. The pedograph shows that in valgus the patient, instead of bearing weight on the usual planes *A-B-C* (Fig. 15), has shifted inward to some such new plane, as *D-E-F*. Contrary to teaching, the pedograph proves that ankle valgus or foot pronation is much more often a complication of hollow foot than it is of fallen arches. Often the arch is perfectly normal. The entire logic of treatment consists in constructing a solid—though abnormal—foundation in the shoe under the deficient ankle so that weight-bearing is compulsory in the direction of the old plane *A-B-C*, or *where it belongs*. A wedged piece of leather in the shoe does the trick. The best means is the insertion of the tomahawk wedge. These wedges are long, narrow slips of sole leather of the shape shown in Figure 16, the common 8-inch wedge being adaptable for any of the ordinary shoe sizes. They are furnished the shoe shops in three different thicknesses. The receiving shoe is prepared by splitting the layers of the inner side of the sole and shank and separating the inner half of the heel with a cold-chisel. Then the tomahawk wedge is inserted into the sole, shank and heel of the shoe, and nailed in place in such a manner that it raises the entire inner border of the shoe—and greatly stiffens the shank—a point of tremendous importance (Fig. 17). In old cases of valgus, attempts at treatment must be graded. In all cases the beginner errs by forcing correction too fast.

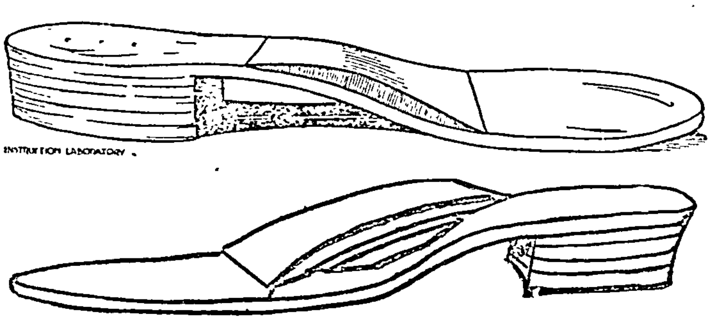

Fig. 14.—Position of rocker shank on the outer sole. The alteration for minor degrees of cavus. With more extreme types the rocker shank of two or more thicknesses of leather is demanded to redistribute weight-bearing. Lower illustration is diagrammatic of positions of leather inserts when multiple.

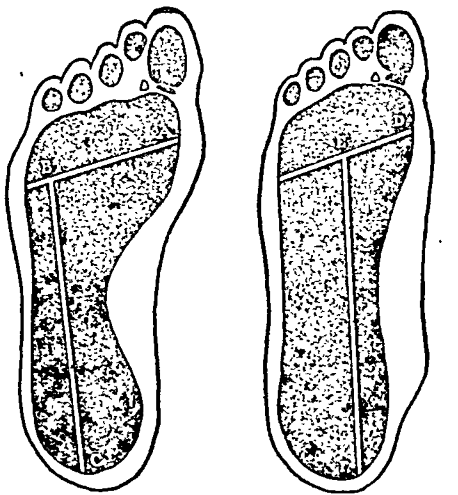

Fig. 15.—General planes of weight-bearing; *A-B-C*, normal planes; *D-E-F*, planes in ankle valgus.

Alterations for Flatfoot.—Most all cases of flattening of the longitudinal arch are accompanied with pronation of the foot and abduction of the forefoot. It is probable that the pronation was the important factor in the descent of the arch. Hence the fundamental principle in treatment is first of all the same problem as in ankle valgus. The tomahawk wedge is inserted in the same way and for the same purpose. Sometimes extra wedges of leather are inserted in the sole with the wedge to correct further the abduction.

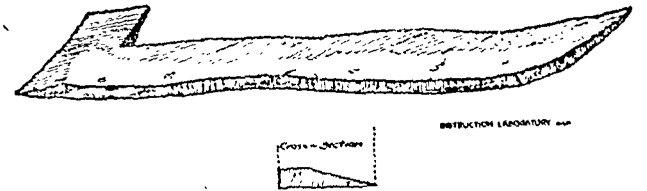

Fig. 16.—Tomahawk wedge, the standard shoe alteration for ankle valgus, to shift weight-bearing to the outer side of the foot; supplied in three thicknesses.

In flatfoot the desired results cannot often be forthcoming from shoe alterations alone. The adjuvant treatment that is reasonable and most profitable consists in various forms of forcible correction and some temporary means of support. Frequently at first the arch has to be forced up into some approach to its original position, and the best means is the Schapps lever or a simple piece of pine 2 by 2 inches and 20 inches long with the edges smoothed. The lever applied by a belt about its end and by means of a figure of 8 about the ankle and outer side of the foot exerts enough force against the padded fallen arch to bring about considerable correction (Fig. 18). No adhesive or plaster-of-Paris dressings are advisable. It is best to support the arch temporarily by some felt pad or padded insole (Fig. 19). The best and quickest results come from the patient repetition of forcible correction and the long persistence in the wedged shoe.

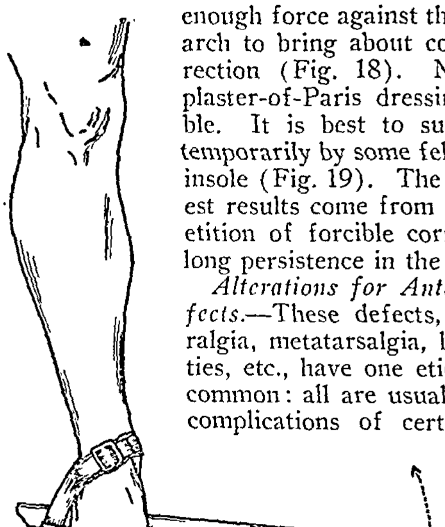

Fig. 18.—Application of Schapps lever for forcible correction of fallen longitudinal arch; protective towel and felt not shown.

Alterations for Anterior Arch Defects.—These defects, Morton's neuralgia, metatarsalgia, bunions, callosities, etc., have one etiologic factor in common: all are usually more or less complications of certain degrees of cavus or high arch.

Evidently Nature intended weight-bearing on the distal halves of the shafts, as well as the ends, of the five metatarsals, and did not intend to cast all the weight on the ends only of these metatarsals, Chinese foot fashion (Fig. 20 *A*). Naturally the higher the longitudinal arch of the foot the less weight there is borne on the metatarsal shafts, and the more on the phalangeal-metatarsal joints. Cavus in the foot breaks down the anterior arch, and secondarily produces the neuralgias and deformities.

The same general principle of restored weight-bearing pertains. First the proper shoe fitting is imperative. Then a shoe alteration known as the anterior heel (Fig. 20 *B*) is employed to restore the burden to these shafts. This anterior heel is a simple piece of leather about 1⅞ to 2⅜ inches wide and as long as the width of the sole of the shoe. This piece is inserted between the sole and shank of the shoe, and between the two layers of leather, obliquely, in such a fashion that it is anchored by nailing or sewing just posterior to the heads of the metatarsals (Fig. 21).

On account of the frequency of these defects, this anterior heel is probably the most useful single shoe alteration in use. It is the counterpart of the Jones cleat, but is much more serviceable and of better appearance. Parenthetically, the anterior heel is a narrow rocker shank applied to a cavus for restoring statics for terminal conditions. Some workers construct the anterior heel higher for the center of the sole than for the two sides. The application of this particular alteration is certainly most satisfactory.

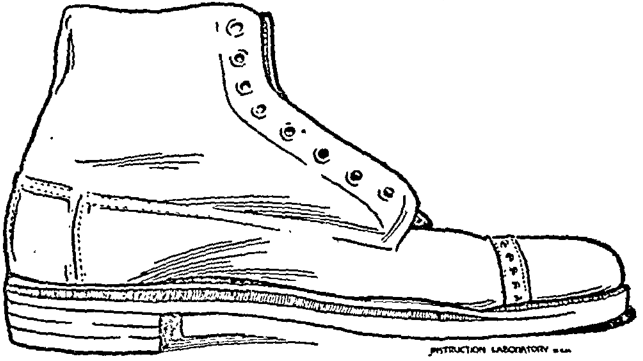

Fig. 17.—The tomahawk wedge in place.

Combined Static Defects.—While each of the foregoing simple static defects has been taken up separately, it must be borne in mind that very frequently two or more defects are found present in the same foot. Ankle valgus and cavus are commonly found together; flatfoot is usually accompanied by valgus; metatarsalgia often complicates all the other defects, etc.

The treatment of such combinations of defects consists in the blending of the alterations for the individual conditions discovered.

Alterations for Short Heel Cords.—The final static foot defect of common Army occurrence is the short heel tendon. Such conditions are often found among ranchers who have always worn high heeled boots. The Army shoe in these cases must have enough leather lifts added to compensate for the shortened tendon.

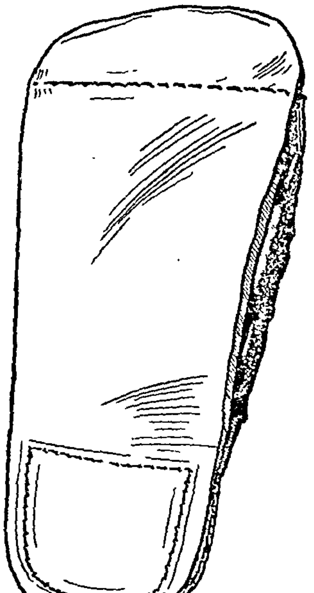

Fig. 19.—Temporary felt supporting insole, for use after forcible correction of flatfoot. Any form of support should be discontinued after two or three weeks.

SUMMARY

Cavus of the first, second or third degree calls for a rocker shank, Size A, B or C.

Ankle valgus of the first, second or third degree calls for a tomahawk wedge, thin, medium or thick.

Flatfoot of the first or second degree calls for tomahawk wedges, thin, medium or thick; forcible correction; and temporary felt support.

Anterior arch defects, metatarsalgia, Morton's neuralgia and anterior callosities call for anterior heels, Size 1, 2 or 3. The width should be specified.

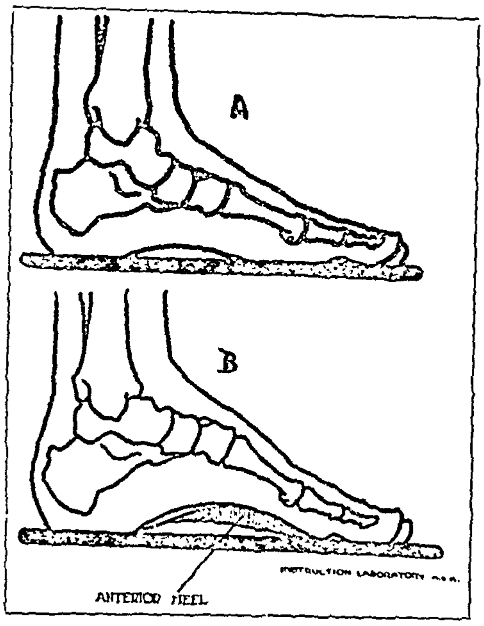

Fig. 20.—*A*, Normal foot; weight-bearing is transmitted to the metatarsals by the soft parts. *B*, hollow foot or cavus that always accompanies anterior arch defects; in this condition the introduction of the anterior heel to restore normal weight-bearing to the metatarsals is necessary.

CONCLUSION

The more experienced the worker in shoe alterations, the less adjuvant treatment usually is necessary to secure results. Mechanical care and skill are mightily important in every alteration, and the alteration is liable to fail with careless, indifferent workers. It must not be surmised that even the experienced do not have to change, raise, lower or alter the positions of their inserts. One of the oldest surgeons often has to revise his prescription as many as three or four times in difficult compound cases before hitting on the right combination. The novice, the careless and those not mechanically inclined do not achieve standard results.

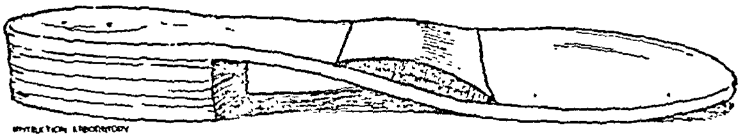

Fig. 21.—Anterior heel in position. This shoe alteration is the most useful single alteration in use in the Army. It successfully meets almost all defects in the forefoot. It can be inserted between the layers of the soles of a pair of Army shoes in seven minutes; this includes individual adjustments.

Effects of Too Much Speed in Military Training.—For a certain period the reports from General Pershing's army showed that the highest mortality from communicable disease was in the National Army and the lowest in the Regular Army. Thus it has been calculated that for a certain period deaths per thousand from pneumonia in the National Army, the National Guard and the Regular Army were in the proportion of 5.65, 4.80, 4.09. I believe that the variation in susceptibility can be ascribed directly to the variation in time of preparation and development which these different units have enjoyed, the development of the National Army having been characterized by intensive training and high speed. I believe that the accumulation of fatigue substances from overtraining for lengthy periods without proper attention to the time element brought about, in the soldiers that I saw, a condition analogous to what we see in the stale athlete, and it is not to be wondered at that the overtrained soldier should be particularly liable to pneumonia, scarlet fever, influenza, etc.—Lieut. D. F. Luby, *Naval Medical Bulletin*, October, 1918.

THE EPIDEMIC OF PNEUMONIA FOLLOWING INFLUENZA AT CAMP LOGAN, TEXAS

PRELIMINARY REPORT

J. N. HALL, M.D. (Denver)
Major, M. C., U. S. Army; Chief of Medical Service
MURRAY C. STONE, M.D. (Springfield, Mo.)
Major, M. C., U. S. Army; Chief of Laboratory Service
AND
JOHN C. SIMPSON, M.D. (Hamburg, Ark.)
Captain, M. C., U. S. Army; Bacteriologist
CAMP LOGAN, HOUSTON, TEXAS

During the period from Sept. 13 to Oct. 8, 1918, inclusive, there were admitted to the base hospital 2,487 cases of influenza, and 416 cases of pneumonia developed, practically all from the influenza cases. The pneumonia has differed in character so widely from the types reported elsewhere that a record seems to be advisable.

Clinically, the disease was lobar pneumonia in all but fifty cases. Generally on the second to the fourth day of the influenza the temperature rose, usually, to about 104, occasionally with a distinct chill. Flatness over one lower lobe, often over both, was found at the first examination. In about half the cases suppressed respiration was noted, but crepitant râles could be elicited in nearly all cases and sharp bronchophony in a considerable number, even from the time of the first examination. Of the whole number of cases, in only four did the disease begin in an upper lobe, although in many of the fatal ones it spread to that region. The flatness was the most pronounced that we have ever seen in acute pneumonia, suggesting fluid rather than consolidated lung, and it generally followed the lines of the lobes involved. The aspirating needle was used rather freely, but fluid was found in only one case.

Because of the frequency of empyema in the hospital during the past winter, and because Major Stone found a little fluid in the pleural cavities in the earlier cases examined postmortem, Capt. J. H. Brown, M. C., Capt. J. E. Cooke, M. C., and Capt. T. P. Caplinger were detailed to examine every case of pneumonia after the fifth day of the disease, and to continue daily examinations in those cases presenting any suggestion of fluid. Yet but few cases were even suspicious. The temperature curve was that of ordinary lobar pneumonia; the pulse rate was rather lower than we have generally observed; crisis was almost unknown. The disease subsided in the patients that recovered with a rather sharp lysis, and recovery has been uneventful.

Approximately 18 per cent. of the cases so far admitted have proved fatal, in general, by the seventh day. Cyanosis has been rather prominent in fatal cases, but not of such degree as in the hemolytic streptococcic bronchopneumonia seen last winter.

Nosebleed was rather frequent. Dry pleurisy, accompanied by much pain, but not with notable effusion, was often noted in the serious cases; delirium was present to such a degree that, for example, nine patients in one fifty-bed ward had to be constantly watched, during the height of the disease. The sputum was commonly red, but less glutinous than the typical pneumonic sputum. Cough was moderate in degree. One case of parotitis and three of phlebitis of the left leg occurred. A most unusual complication has been noted in five cases, namely, the development of surgical emphysema about the root of the neck, spreading downward to the nipple line exactly as in severe whooping cough. We had two examples of this in the severe cough of measles last winter, but no one connected with the hospital had known of it in acute pneumonia. In none of these cases was the cough even moderately severe. Major Stone has suggested that the presence of this complication may be related to the fact that the only case of empyema so far discovered perforated into a bronchus on the seventh day of the disease, at a time when we were purposely delaying operation as advised in recent communications from the office of the Surgeon-General, and in accordance with the lessons of our own experience heretofore. He suggests that the infecting organism apparently damages the lung tissues in such a way as to render perforation by air or pus more frequent than usual.

The few cases of bronchopneumonia presented no especial feature of interest. The epidemic has produced a great number, approximately 10 per cent., of abortive cases of pneumonia. The dulness over a lower lobe in the back with suppressed respiration and crepitant râles, with the usual fever, led us in the early cases to transfer the patients to the pneumonia wards at once. The sudden drop in temperature with recession of all physical signs within twenty-four to forty-eight hours led us to reclassify such cases as abortive pneumonia. Yet in a few cases the physical signs persisted as usual after the subsidence of fever.

During the present epidemic of influenza and pneumonia, 302 sputums have been examined for type determination of pneumococcus and the presence of hemolytic streptococcus with these findings:

Pneumococcus Type I, 1; Type II, 12; Type III, 16; Type IV, 273; hemolytic streptococcus, none.

In nine cases that have come to necropsy, cultures have been made from the involved portion of the lungs, the pleural cavities, the heart blood and the pericardium, and the following organisms found:

Lungs: pneumococcus, 4; influenza bacillus, 1; hemolytic streptococcus, 1; no growth, 3.
Pleural cavities: pneumococcus, 6; sterile, 3.
Heart blood: pneumococcus, 3; sterile, 6.
Pericardium: sterile, 9.

Seventy-nine uncomplicated cases of influenza have been studied by smears and cultures from the throat and sputum, with the following organisms found in either throat or sputum:

Influenza bacillus, 58; pneumococcus, 76; *Micrococcus catarrahlis,* 39; hemolytic streptococcus, 4.

POSTMORTEM FINDINGS

Thirteen cases of pneumonia were examined postmortem between September 20 and October 5. The one on September 20 showed patchy consolidation affecting both lower lobes and was due to the hemolytic streptococcus. Another case showed several old tuberculous cavities in the right lower lobe, which lobe showed well defined consolidation. With these two exceptions all the other cases of the series, eleven in number, presented the typical picture of lobar pneumonia. Complete consolidation of one lobe was present in six cases, there being no instance in which less than this amount of lung was involved. Two lobes were completely involved in four cases, and three lobes in two cases. In every instance in addition to the massive lobar consolidation, partial involvement was present in other lobes. This was found four times in one other lobe, and seven times in two other lobes. This partial involvement was usually a more recent lesion, rather an intense engorgement than a consolidation, and in most instances was found on the side opposite from the older process. There was a decided predilection for the lower lobes, as nine upper lobes showed no gross changes, while this was true of but two lower lobes. The middle lobe was unaffected seven times.

A serofibrinous pleurisy was present eight times, but the fluid was small in amount except in one instance. A small serous exudate was found in two cases. Interlobar pleurisy was not uncommon. Beginning pericarditis was present in three instances. The diagnosis of lobar pneumonia was confirmed histologically.

HISTOLOGIC APPEARANCES FOUND IN THE LUNGS

In the portion of the lung last affected, and usually comprising a part of a lobe on the side opposite the oldest lesion, there appeared scattered areas of round cell infiltration chiefly in the neighborhood of small bronchi, with more or less normal lung tissue between. Many of the alveoli, however, were filled or partly filled with serum and leukocytes, and in some instances with a large amount of blood.

Sections from older lesions, that is, from lobes with complete or nearly complete consolidation, and grossly presenting a firm, dark red, slightly moist surface on section, showed marked engorgement of the capillaries and an exudate of blood, serum, leukocytes, and fibrin filling all the alveoli.

In a few instances the lesions were further advanced, the gross specimen being gray or reddish gray. These sections showed the alveoli uniformly filled with leukocytes and fibrin, and little or no blood. In some there was apparently a softening of the exudate and loosening from the alveolar walls.

MEASURES THAT DIMINISHED SEVERITY OF EPIDEMIC

Statistics show that our base hospital admission rate was the highest in any camp in the United States and that our death rate was the lowest. We are convinced that the low death rate is directly dependent on the care used to have all the sick sent to the hospital, as set forth in the high admission rate. We believe, therefore, that the chief reasons why this severe epidemic was not even more severe are as follows:

At the very beginning, Lieut.-Col. J. M. Willis, M. C., commanding officer of the base hospital, placed sufficient ward space at our disposal so that no overcrowding was necessary; even at the height of the epidemic, when we had nearly 400 cases of pneumonia on hand, a sufficient number of hospital corpsmen were furnished to give every patient brought in prompt attention; surgeons were detached from other departments of the hospital for temporary service on the medical side, and the Surgeon-General promptly sent us 100 additional trained nurses so that there was no lack of trained personnel in any department.

The camp surgeon, Lieut.-Col. J. A. Burket, supplemented the work of our commanding officer by having every suspicious case of influenza traced down at once, and nearly all were sent to hospital immediately. He also gave us great and timely assistance by transferring to us, for the emergency, a number of surgeons from his department.

A RECENT EPIDEMIC OF ACUTE RESPIRATORY INFECTION AT CAMP CUSTER, MICH.*

PRELIMINARY LABORATORY REPORT

WYNDHAM B. BLANTON, M.D. (Richmond, Va.)
Captain, M. C., U. S. Army

AND

ERNEST E. IRONS, M.D. (Chicago)
Lieutenant-Colonel, M. C., U. S. Army
CAMP CUSTER, BATTLE CREEK, MICH.

From a knowledge of what other camps were experiencing with the epidemic of so-called "influenza," and in anticipation of an outbreak of a similar infection in this camp, certain preliminary bacteriologic work was attempted. Several days before any cases of influenza were reported at Camp Custer, a study was begun to determine the prevalent mouth flora of healthy individuals. For this purpose cultures were made from the throats of enlisted men of the Fourteenth Sanitary Train. Smears and cultures on plain blood agar plates were made from the nose and nasopharynx; in all, 357 cultures were taken. The usual mouth organisms were recovered. In addition, 75 per cent. of the cultures showed a hemolyzing streptococcus. In only five cases, or in a little more than 1 per cent., was the influenza bacillus identified. Before these studies could be extended, the epidemic broke. However, this much was apparent: A high percentage of healthy individuals were carrying hemolyzing streptococci somewhere in their respiratory tract. The influenza bacillus was not present in greater numbers than one is accustomed to find this organism in normal throats.

INFLUENZA

Influenza patients who showed no physical signs of pneumonia were first studied. Throat cultures, blood cultures, blood counts and urinalyses were made.

Throat Cultures.—Smears and cultures of the throat were made in 366 cases. Plain blood agar plates were employed, and special care was taken to identify the influenza bacillus. Organisms recovered were: hemolyzing streptococci, 34 per cent.; nonhemolyzing streptococci, 33 per cent.; pneumococci, 12 per cent.; influenza bacilli, 8 per cent.

Blood Cultures.—One hundred and forty cultures were made on these patients at various stages of the disease. In all cases the cultures remained sterile.

Blood Counts.—Five hundred and eighty leukocyte counts were made with the results as shown in Table 1. Seventy per cent. of these counts showed 8,000 cells or less per cubic millimeter. This leukopenia was the most impressive feature of the blood count. The polymorphonuclear leukocytes showed but slight increase over the normal. There has been no conspicuous lymphocytosis, nor other noteworthy features of the blood count.

Urinalyses.—Twenty per cent. of the urines examined have shown albumin. In the majority of cases this was recorded as a faint trace. Casts were an infrequent finding, occurring in 4.7 per cent. of the cases.

PNEUMONIA

It became apparent with the development of a large number of cases of pneumonia that the greatest importance attached to their study. Blood cultures, sputum typings, blood counts and urinalyses were made in as many cases as possible.

Blood Cultures.—Five hundred and ten blood cultures in cases of pneumonia have been made to date. Of these, eleven have shown organisms as follows: hemolyzing streptococcus in ten cases, *Pneumococcus mucosus* once. In other words, only 2 per cent. of pneumonia patients have shown a bacteremia. These cultures were taken from the sickest patients, the majority of whom died shortly after. Many cultures were sterile which were taken only a few hours antemortem. In seven of the eleven cultures that have shown organisms, the blood was taken just prior to death. The evidence clearly points to the fact that the infection of the lungs is only exceptionally accompanied by a bacteremia and that the blood stream is not invaded up to a very late period in the disease. These findings agree with the apparent method of development of the pulmonary lesions and add weight to the belief that a preexisting bronchitis usually unassociated with marked sore throat gives rise to a bronchopneumonia by a process of direct extension. These results are not entirely in keeping with our experience with streptococcus pneumonias of last winter, which usually developed on the basis of a severe primary sore throat and were accompanied by positive blood cultures in 20 per cent. of the cases. It is of interest to note that of the first 430 blood cultures taken, only four showed organisms, less than 1 per cent.; while seven of the last eighty cultures have been positive; this agrees with other later developments in the epidemic.

TABLE 1.—RESULTS OF 1,580 LEUKOCYTE COUNTS MADE BEFORE AND AFTER THE DEVELOPMENT OF PNUEMONIA

Leukocytes per C.Mm.	Prepneumonia Stage		Pneumonia	
	No. of Cases	Per Cent.	No. of Cases	Per Cent.
4,000- 6,000	96	16.5	288	28.8
6,000- 8,000	306	52.7	390	39.0
8,000-12,000	113	19.5	177	17.7
12,000-16,000	48	8.3	83	8.3
16,000-20,000	14	2.5	29	2.9
20,000-30,000	3	0.5	33	3.3
Totals..............	580	....	1,000	
Differential Counts: Occurrence of polymorphonuclear leukocytes: Per Cent.				
40-50	6	2.6	35	3.5
50-60	40	17.4	112	11.2
60-70	60	26.0	260	26.0
70-80	97	42.2	459	45.9
80-90	27	11.8	134	13.4
Totals..............	230	....	1,000	

Sputum.—The character of sputum produced by pneumonia patients was often unsatisfactory for typing because of the extremely critical condition of the patients at the time the collections were attempted. When sputum could be procured it was usually abundant, mucopurulent, and greenish yellow. A fair proportion of sputums were blood streaked, and quite a number were described as rusty. An attempt was made to trace some relation between the type of sputum and the organisms recovered from the sputum during life and the lungs postmortem. None appeared to exist. Rusty sputums were found as often in cases of streptococcus as of pneumococcus infection, and mucopurulent sputums occurred as frequently with one organism as with another. As many sputums were typed as time would permit. From the original specimens smears were made, blood plates streaked, and Avery's rabbit's blood broth inoculated. Agglutinations and precipitations were done after from six to eight hours with the broth suspension. Bile solubility was determined and the results were checked by plain blood agar plates. In all, 740 sputums of pneumonia patients have been typed. The preponderance of streptococci is apparent, especially the nonhemolytic variety. Of the total of 451 streptococci recovered, 30 per cent. were hemolytic and 70 per cent. nonhemolytic. The common mouth pneumococcus was isolated in far higher percentage than usual, Type IV occurring 148 times. The remaining pneumococci were relatively infrequent. The influenza bacillus was identified in thirty-eight instances. In these cases the organism was seen in smears and subsequently recovered from the blood agar plates. In the majority of cases the influenza bacillus was associated with the streptococcus. In only eight instances was it found alone.

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* Compilation to and including Oct. 22, 1918.

TABLE 2.—TYPES OF ORGANISMS RECOVERED FROM THE SPUTUM OF PNEUMONIA PATIENTS

	Number of Cases	Per Cent. of Total
Pneumococcus:		
Type I	11	1.5
Type II	16	2.15
Type III	16	2.15
Type IV	148	20.00
	—— 191	—— 25.8
Streptococcus:		
Hemolytic	126	17.0
Nonhemolytic	325	43.9
	—— 451	—— 60.9
Influenza	38	5.2
Unsatisfactory	60	8.1
Total	740	

That these results do not accord entirely with the postmortem bacteriology of the lungs and blood is explained by the fact that many patients were moribund before the laboratory was aware of their sickness. From many of the patients sputum could not be had. Therefore, pneumonias caused by the more fatal types of pneumococcus had their bacteriology worked out postmortem, while patients with the less severe infections with the pneumococcus for the most part recovered, and the type was determined during life.

Blood Counts.—A study of 1,000 leukocyte counts in pneumonia patients disclosed a striking lack of reaction on the part of the bone marrow; 67.8 per cent. showed 8,000 or fewer leukocytes per cubic millimeter, and 85.5 per cent. were 12,000 or under per cubic millimeter. These counts agree with those obtained in the prepneumonia period. The secondary invasion of the lungs is apparently without effect in arousing the bone marrow, as is commonly the case in pneumonia. Leukocyte counts have, therefore, been of no value in indicating the onset of pneumonia.

Urinalyses. — Urinalyses on pneumonia patients showed the presence of albumin in 40 per cent., about double the incidence in uncomplicated "influenza" cases. Casts have likewise been a much more frequent occurrence, being present in 22 per cent. of the urines examined.

POSTMORTEM BACTERIOLOGY

The attempt has been made to secure as large a number of lung and heart's blood cultures as possible from fatal cases. A total of 280 fatal cases were thus studied. When necropsies were not performed, lung and heart's blood punctures were made and smears and cultures procured. In all cases examined postmortem, two blocks of consolidated lung were taken in sterile Petri dishes under sterile precautions, and carried to the laboratory for cultures. Plain blood agar plates were streaked and broth cultures inoculated. A number of fresh smears were made from each lung. The heart's blood was cultured in every case. In smears and in cultures particular care was taken to identify all gram-negative bacilli. All bile-soluble gram-positive diplococci that did not come down in pneumococcic serums of Types I, II and III were put through mice for verification. In a number of instances agglutinations were obtained from the mice after failure with rabbit's blood broth suspensions, indicating the importance of the mouse method as a check in Group IV diagnosis.

The result of these cultures is shown in Table 3. No one organism stands out above the others as peculiarly the etiologic factor. Streptococci have been present 142 times in the lungs, and pneumococci seventy-eight times. Hemolytic and nonhemolytic streptococci have appeared about equally as the causative factor. Type II has occurred about twice as frequently as any other type of pneumococcus. Type III has been recovered eighteen times. Small gram-negative bacilli have been recovered five times from the lungs, and three times from the heart's blood. As a usual occurrence only one organism was found in a given case. In three instances in the lungs, the influenza bacillus was found in conjunction with the streptococcus. In two cases it was the sole organism recovered. In the heart's blood it was once present with the streptococcus, once with staphylococcus, and once alone.

The occurrence of such a variety of organisms in pneumonic lungs suggests that they are secondary invaders, the field being prepared by the lowering of resistance incident to a preceding disease, which in this epidemic was in most instances influenza, and that in each instance the invader is probably the organism of which each individual is at the time a carrier. The high percentage of positive heart's blood cultures, taken in conjunction with contradictory antemortem findings, indicates how rapidly and at what a late period in the course of the disease the defense factors in the blood of the patient break down to allow invasion.

TABLE 3.—BACTERIOLOGIC FINDINGS AT NECROPSY FROM THE LUNGS AND HEART'S BLOOD OF PNEUMONIA PATIENTS

	No. Recovered from Lungs	No. Recovered from Heart's Blood
Pneumococcus	78	77
Type I	8	6
Type II	34	33
Type III	18	16
Type IV	18	22
	142	110
	76	62
	66	48
	8	3
	30	29
	22	86

Table 4 shows the sugar reaction of forty-two organisms recovered from the lungs and the heart's blood at necropsy and chosen at random. All of these organisms were bile insoluble, produced no hemolysis on blood mediums, occurred in chains or in pairs, and retained the gentian violet when stained by Gram's method. The variability of inulin fermentation is particularly evident. The absence of mannite fermenters, strains corresponding to *Streptococcus fecalis,* is also noteworthy.

PATHOLOGY

Without exception the deaths from this respiratory epidemic have been due to secondary pneumonia. In no instance has a case come to necropsy in which death occurred from influenzal infection alone. The bodies have been those of well nourished young men, the termination having been reached too quickly for gross external changes. Many of the bodies have shown a moderate degree of corpulence. Reference to Table 5 will show the associated chronic lesions manifested. These have occurred in sufficient number to warrant the belief that in a fair proportion of fatal cases the patients were seriously handicapped beforehand in the battle with their infection.

TABLE 4.—SUGAR REACTION OF FORTY-TWO ORGANISMS FROM THE LUNGS AND THE HEART'S BLOOD

Streptococcus	Fermentation Reactions *					
	Saccharose	Inulin	Salicin	Mannite	Lactose	Raffinose
1	—	+	+	—	—	—
2	+	—	+	—	—	+
3	+	—	+	—	—	—
4	—	—	+	—	—	—
5	..	—	..	—	+	
6	..	—	..	—	+	
7	—	—	—	—	+	—
8	—	—	—	—	—	—
9	..	—	..	—	+	
10	—	+	—	—	—	—
11	+	—	—	—	+	—
12	..	+	..	—	+	
13	—	—	+	—	—	—
14	—	+	—	—	+	—
15	..	—	..	—	+	
16	—	+	—	—	—	+
17	—	+	—	—	+	—
18	—	+	+	—	—	+
19	..	—	..	—	+	
20	..	+	..	—	+	
21	..	+	..	—	—	
22	+	—	—	—	+	—
23	..	+	..	—	+	
24	—	—	—	—	+	—
25	—	—	—	—	+	+
26	—	—	+	—	—	—
27	—	—	+	—	—	—
28	..	+	..	—	+	
29	..	+	+	—	+	+
30	—	+	+	—	+	—
31	+	—	—	—	+	+
32	—	—	—	—	+	—
33	..	—	..	—	+	
34	..	+	..	—	+	
35	..	+	..	—	+	
36	—	—	—	—	+	—
37	+	—	+	—	+	—
38	—	+	+	—	+	—
39	—	—	—	—	—	—
40	—	—	+	—	—	—
41	—	—	—	—	+	—
42	—	—	—	—	—	—

* In this table — indicates no fermentation, and + indicates fermentation.

For the most part there has been a striking similarity in the appearance of the respiratory organs in the 123 bronchopneumonias coming to necropsy. The mucous membrane of the trachea and bronchi has appeared intensely red, swollen and covered with a mucopurulent exudate. The bronchial glands have been enlarged, soft and reddened on section. The majority of the lungs have been voluminous and heavy. As a general rule the posterior lobes have varied from the remaining lobes, and have presented a surface dark purplish red, sometimes smooth, sometimes roughened and dull from collections of fibrin. They have felt firm throughout, and only occasionally could areas of greater density be made out.

The remaining lobes have shown a greater proportion of air-containing tissue. They have usually presented pale, nonresilient emphysematous patches interspersed with dark red, firm and slightly depressed areas which were to be felt as irregular consolidations extending to various depths into the lung substance. Section of the lung through the lower lobes usually displayed an exceedingly moist cut surface, the slightest pressure forcing to the surface quantities of blood-tinged fluid. This may exist to such a degree as to obscure the underlying process. Again, the confluence of separate patches of consolidation may be so complete as to be confusing, but careful study has usually made evident the bronchial distribution of the process. As a general occurrence, however, patchy areas of consolidation clustered about the bronchi were easily made out. Mucopurulent plugs filled the bronchi and bronchioles. Section of the remaining lobes showed a much drier lesion. Here islands of dark red, often hemorrhagic, consolidated lung showed against a paler background of nonelastic emphysematous pulmonary tissue.

Only one case of lobar pneumonia has occurred. This was caused by a Type I pneumococcus. It appeared during the first days of the epidemic, and its occurrence was undoubtedly fortuitous. Four cases showed the changes of an interstitial bronchopneumonia. Here the white, thickened, pus-filled bronchioles surrounded by hemorrhagic, edematous or indurated areas of consolidation presented a very distinctive picture, entirely different from the great majority of the pneumonic processes seen.

Microscopically, a variety of pulmonary changes have been found, but nothing has been encountered beyond what one is accustomed to expect in bronchopneumonia. The accumulation of inflammatory cells may be patchy, or so massed as to present, in a limited number of sections, an appearance indistinguishable from lobar pneumonia. The exudate may be very dense or it may be thin; in either case edema and congestion have been marked, and so greatly compromised the remaining lung tissue. Polymorphonuclear leukocytes have, as a rule, greatly predominated in the exudate. In other sections, however, the presence of many mononuclear wandering cells and epithelial cells has been noted. Often great quantities of erythrocytes have been massed together in the air cells, sometimes presenting a very striking picture, especially when contiguous to the other air cells stuffed with the inflammatory exudate. Fibrin has not been a prominent part of the exudate except in one case. In a few cases, wide stretches of exudate appear from which all remains of alveolar walls have disappeared. In several such cases, focal areas of disintegration were in process, evidenced by poorly stained, fused masses of cellular débris in which many remains of destroyed nuclei appear. The terminal bronchioles usually contain the same type of exudate described in the alveoli. The mucous membrane is often separated off, and tangled fragments appear free in the exudate. Smears of the lungs usually showed enormous numbers of gram-positive diplococci. It was rare to find organisms arranged in chains. Microscopic study of the remaining organs has not led to any noteworthy disclosures. Eighty of the 123 cases of pneumonia examined *postmortem* showed an associated pleurisy. Thirty-four were described as serofibrinous, twenty-five as serofibrinopurulent, and twenty-one as fibrinous.

Strange as it may seem, there was no difference to be made out in the nature of the process caused by the streptococcus, pneumococcus or influenza bacillus. It was not difficult to distinguish Type III pneumococcus by the sticky exudate and the greater tendency toward confluence, but no matter what the infecting organism, each appeared to produce the same type of pulmonary lesion with equal facility.

Reference to Table 5 will show that there have been no particularly constant extrapulmonary complications. Nine cases have shown hemolytic jaundice, the majority of these appearing late in the epidemic. Four cases showed a massive interstitial emphysema, probably beginning in the multiple rupture of the emphysematous alveoli at the pulmonary hila. There were four cases of pneumococcus meningitis developing in the course of the disease, only two of which came to necropsy, however. There have been relatively few splenic tumors. A firm, congested organ not a great deal larger than normal has been the rule. Acute changes in other parenchymatous organs have been inconspicuous. Marked acute nephritis occurred only three times. Rupture of the rectus muscles was found in four instances. The bone marrow of the femur in all cases studied has appeared to gross examination pale and unreactive.

TABLE 5.—COMPLICATIONS OF ONE HUNDRED AND TWENTY-THREE CASES OF BRONCHOPNEUMONIA DISCLOSED AT NECROPSY

Pulmonary congestion and edema	98
Congestion of the spleen	71
Pleurisy	71
Serofibrinous	34
Serofibrinopurulent	20
Fibrinous	20
Cloudy swelling of the kidneys	21
Icterus	8
Lung abscess	5
Interstitial emphysema	4
Acute nephritis	3
[illegible]	1
„ [illegible]	2
[illegible]	3
Rupture of the rectus muscles	3
Cardiac dilatation	3
Cholecystitis	1
Abscesses of the kidneys	1
Myocarditis, acute	1
Abscess of the foot	1
Gastric ulcer	1
Status lymphaticus	1
Abscess of the right kidney	1
Congenital cystic kidneys	1
Pleural adhesions, marked	8
Pericarditis, chronic, adhesive	1
Cholelithiasis	1
Hydropericardium	1
Cirrhosis of the liver	1
Peritoneal adhesions	1
Endocarditis, chronic	1
Nephritis, chronic	1
Horseshoe kidney	1

There has been a noticeable and instructive change in the course and manifestations of the disease in the last days of the epidemic. The leukopenia has disappeared in large measure, twenty of the last thirty-five leukocyte counts having averaged 20,000 cells per cubic millimeter. A far higher percentage of blood cultures show positive results. Of the total of eleven positive findings, seven have been obtained in the last eighty cultures. Synchronous with these changes, necropsy findings have shown older processes in the chest, more fibrin and pus in the pleural cavities, collapsed lungs showing various stages of resolution and extension of the bronchopneumonia.

The average leukocyte count in the streptococcus pneumonias of last winter in this hospital was 17,000, and positive blood cultures were obtained in 20 per cent. of the cases. The duration of the present pneumonias to the time of death has been noticeably shorter than those studied last winter. There is possible significance in the fact that the few pneumonias of the present epidemic that presented a picture at necropsy most like those of last winter are those which have a period of longest illness, in this respect also corresponding to last winter's pneumonias.

In view of the high incidence of pneumonia in the Southern camps, the presence of large numbers of carriers of intestinal parasites has been suggested as possibly a predisposing factor. In search of such factors in the development of pneumonia in the recent Custer epidemic, the incidence of intestinal parasites was investigated. Out of 150 stools of pneumonia patients taken at random and examined, no ova or worms were found. Previous to the outbreak of influenza, a survey of several thousand Southern troops stationed at this camp showed intestinal parasites in 3 per cent. of the cases studied.

To determine the pathogenicity for laboratory animals of various strains of hemolytic and nonhemolytic streptococci recovered at necropsy, mice, rabbits and rats have been inoculated. Of thirty-three inoculated mice, twenty-two died within twenty-four hours, the original organism being recovered postmortem in each instance. Hemolytic and nonhemolytic streptococci were equally fatal. Fourteen rabbits and twelve rats were injected intravenously and subcutaneously with hemolytic streptococci. With the exception of one rabbit and one rat, both of which died of a rapid septicemia, complicated in the case of the rabbit by bronchopneumonia, all of these animals are still living.

SUMMARY

The patient is attacked by a severe acute infection of unknown etiology. In the prepneumonia stage the principal objective signs are those of a marked mucopurulent bronchitis, with high temperature, generalized pains, prostration and a leukopenia. If the process advances, the peribronchial lung tissue is quickly involved by direct extension. A massive bronchopneumonia, in many cases accompanied by acute pulmonary congestion and edema, rapidly develops, which as quickly resolves or goes on to an early termination. The marked leukopenias are probably only one phase of a general overpowering of the defensive forces of the organism. The rarity of concurrent septicemias is doubtless explained by the rapid course of the disease and the mode of origin from the bronchi. The influenza bacillus has played a minor rôle in the production of bronchopneumonia. The infective cause of the antecedent respiratory infection remains undetermined.

Aloes as a Local Sedative.—Friar's balsam, which contains aloes, is used as a sedative for bites, wounds and skin irritations, and is a good preparation for the purpose. F. W. Cock, M.D. (*Lancet*, London, Sept. 7, 1918), says a more pleasant form in which to use aloes for external sedative purposes is a saturated solution of aloes in tincture of tolu. It should be kept in a well stoppered bottle and shaken before using. For bites it should be applied once or twice before any scratching is done. It gives complete relief from the intense itching of harvest bug bites. Cock also recommends tincture of tolu for use in the croup kettle in bronchitis instead of compound tincture of benzoin, as being just as effective and more pleasant than the friar's balsam, in which latter the disagreeable odor of the aloes persists after the aromatic portion has volatilized.

TRANSFUSION IN THE DESPERATE PNEUMONIAS COMPLICATING INFLUENZA

PRELIMINARY REPORT ON THE SUCCESSFUL USE OF TOTAL IMMUNE CITRATED BLOOD

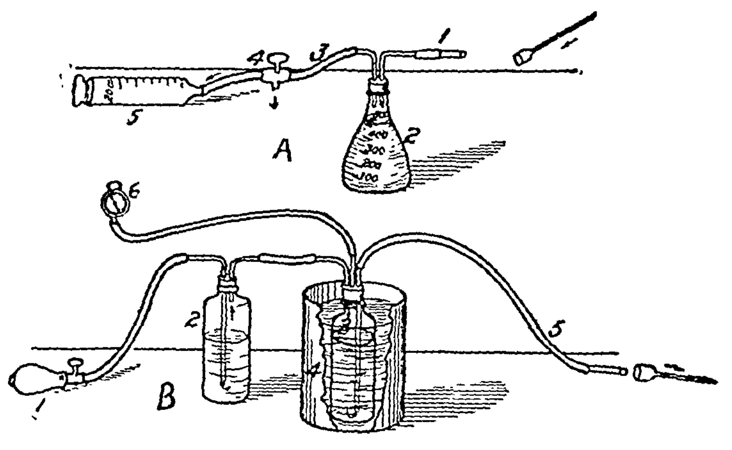
C. W. ROSS, M.D.
Lieutenant, M. C., U. S. Navy

AND

ERWIN J. HUND, M.D. (San Francisco)
Lieutenant, Junior Grade, M. C., U. S. N. R. F.

WASHINGTON, D. C.

The problems presented to the medical personnel supervising the care and treatment of the selected seriously ill civilian employees of the Mare Island Navy Yard were many. These cases represent a small percentage of the total illness of the community, since many of those not seriously attacked went to their homes and did not report to the emergency hospital; and our allotment was principally composed of neglected patients who did not do well with home treatment together with a small proportion of men who had no home or who were taken so suddenly and severely ill that they were unable to get home. The general status of the large majority of patients, with a resultant failure of accepted care and treatment, was most discouraging. The average patient was of the lower type as regards mentality, morality and personal hygiene, and in the main was physically deficient. A large proportion of the patients had been ill and without even simple care for from two to eight days before admission. Fifty per cent. of the pneumonia patients had been ill for four or more days and presented a uniformly low white blood count, from 2,000 to 4,000, extreme toxic cardiopathies with vasomotor palsy, cyanosis, depressed respiratory activity, no localization of the pneumonic process, delirium and tremendous acidosis, with greatly deficient or absent urinary chlorids—conditions that remained uncorrected by the usual care and the desperate efforts of alkalinization by intravenous, subcutaneous and colonic routes, and the stimulation of leukocytosis by the intravenous injection of magnesium sulphate and other supportive measures.



Apparatus for transfusion: *A*, receiving apparatus: 1, receiving tube with very short rubber connection (all paraffined); 2, 500 c.c. Ehrlenmeyer flask (paraffined); 3, suction tube for partially exhausting air from flask; 4, two-way stopcock; 5, 20 c.c. syringe; *B*, apparatus for giving blood to recipient: 1, bulb and valve (from sphygmomanometer); 2, wash bottle (containing mercuric chlorid, 1:500); 3, delivery bottle for citrated blood; 4, vessel containing water at temperature of 43 C.; 5, delivery tube; 6, pressure gage (to measure rate of flow and pressure).

Previous work and excellent results by others with the use of serum from convalescent influenzal pneumonia patients suggested its use to us. However, the difficulty of keeping serum properly, and the uncertainty of testing the old serum as regards compatibility, made it inconvenient to our circumstance. The value of immune serum having been established, no objection to the use of total blood could be seen. The added advantages theoretically to be gained by the use of total blood are:

1. The increased coagulating power caused by the introduction of blood platelets. It was found that in advanced cases the coagulability of the blood was markedly decreased, and was undoubtedly an important factor in allowing this type of pneumonia to progress to a fatal termination.

2. The fact that additional immune bodies are contained in the leukocytes, as first advanced by Metchnikoff and later shown by practical application. Cases progressing to a fatal termination have shown an increasing leukopenia down to 2,000 and lower. We therefore decided to try transfusion of total blood of persons convalescent from two days to six weeks (height of immune content of blood) from pneumonia complicating influenza.

The simplicity, the safety and the brilliant results have been most encouraging.[1] In thirteen cases of the desperate type described, the following brief observations have been noted: Four patients, two of whom had been ill for more than ten days and were at the time moribund, died. Of the remaining nine, all showed definite localization of the pneumonic process with progressively increasing leukocytosis and resolution, rapid clearing of cerebrospinal, respiratory, cardiovascular and renal disturbances, diminished acidosis, and normal temperatures for from twenty-four to seventy-six hours.

We are using from 200 to 400 c.c. of blood at a dose and repeating in from twelve to twenty-four hours if marked results are not obtained. With improved technic we are using it early in the course.

TECHNIC

The usual delirium of the patient, the absence of a surgically clean place for work, and the occasional delay suggested the citrate method as the more practical. The work in emergency wards and tents demanded special care as regards avoidance of infection. This technic has made the procedure safe and simple:

The donors are persons who have had a definite influenza accompanied by a definite pneumonia; the time of selection is from three days to six weeks of convalescence (height of immune body content). Donors are selected from our own patients and from those in surrounding districts. Donors must be subjected to the Wassermann test and clinical examination for syphilis. The donor's and the recipient's blood is tested for isohemolysins and iso-agglutinins.[2] We have found several incompatibilities. All preliminary tests having been made, the blood is taken with a paraffined receiving apparatus from the veins about the anticubital fossa with the usual surgical technic. The apparatus shown in the accompanying illustration allows no exposure of blood to infected air. The paraffined receiving flask minimizes the danger of coagulation. A 1 or 2 per cent. solution of sodium citrate in physiologic sodium chlorid solution is used.

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[1] Detailed case reports and statistics are to follow in a future report.

[2] Compare Kolmer, J. A.: Practical Text-Book of Infection, Immunity and Specific Therapy, with Special Reference to Immunologic Technic, Ed. 2, Philadelphia, W. B. Saunders Company, 1918.

The blood is transferred to the closed apparatus for delivering the blood to the recipient. A vein is chosen on the arm and the usual technic followed. The pressure gage is of extreme value to control rate and pressure of flow. The citrated blood is kept at proper temperature by a water bath, as shown in the illustration. Exclusive of laboratory tests, it takes approximately forty-five minutes to perform a complete transfusion, taking and giving.

ERYTHEMA MULTIFORME

A CLINICAL AND LABORATORY STUDY OF FORTY-SEVEN CASES

WILLIAM H. GUY, M.D. (Pittsburgh)
Captain, M. C., U. S. Army
CAMP TRAVIS, TEXAS

A definite cause may be ascribed to certain cases of the clinical entity that we call erythema multiforme. The rôle of certain drugs, antitoxins and serums has long been recognized. Cases developing following the ingestion of stale meat, fish, oysters, etc., have been seen sufficiently often to warrant the assumption of direct causation, theoretically being due to the absorption of products of decomposition, bacteria or their products. It would seem that a few reported cases have been due to uterine irritation, a neurosis, etc. Parker and Hazen studied a group of cases occurring in the course of such diseases as typhoid and diphtheria, and were inclined to favor a toxic theory. The theory of absorption of intestinal toxins has long been prominent in the literature. Lain, Chipman and others have recently associated erythema multiforme with focal infections about the teeth, tonsils and accessory air sinuses. Mahon, Vidal and others, from a purely theoretical standpoint, believed a number of cases to be of bacterial origin. Corlett reported a case following a gunshot wound in which a streptococcus was found. Epidemics have been reported by Gaul, Herxheimer, Duhring and others.

I wish to report certain phases of an endemic form of erythema multiforme at Camp Travis, Texas, during the months of February and March, 1918. In all, forty-seven cases were seen, the cutaneous pictures of which varied through all grades with mild erythematous lesions to those showing all manner of individual lesions or a preponderance of vesicular and bullous lesions on skin and mucous membranes. In most of the cases with extensive skin involvement the onset of the disease was heralded by a mild chill or chilly sensations, followed by a febrile reaction that continued over a period of from fourteen to twenty-one days. The temperature curve was irregular but showed a tendency to an evening rise and a morning remission, all ending by lysis. Many of the patients observed had a rise of temperature for two or three days only, the highest recorded temperature being about 100. Several had no abnormal temperature. There were purpuric lesions in approximately 10 per cent. of the cases. Only two gave a history of an attack prior to enlistment, while ten of the forty-seven returned to the hospital with a second attack, one with a third. We early began to investigate every patient that was admitted to the hospital. Careful physical examinations failed to reveal anything noteworthy except that nearly all had hypertrophied and mildly inflamed tonsils. Several had open wounds, the result of recent vaccinations.

LABORATORY FINDINGS

All the urines were practically normal. A few showed a transient albuminuria.

The feces were negative.

In the red cells of the blood there was no change; in the white cells, a moderate leukocytosis, rarely over 11,000.

The hemoglobin was normal.

The differential count showed that the leukocytosis was due to an increase in the polymorphonuclears.

Blood cultures, taken at different times during the course of the disease, were all negative, as were cultures from vesicular and bullous lesions.

Throat swabs showed all the organisms usually found.

Cultures from deep tonsillar crypts showed in thirty cases a hemolytic streptococcus as the predominating organism. Superficial swabs were negative for this organism in the same cases. In nine cases a pyogenic streptococcus was found. In two cases in which the throat and tonsils were negative, the hemolytic streptococcus was isolated from recent vaccination wounds.

At the same time that the cases under consideration were being studied, there was in Camp Travis an epidemic of streptococcic respiratory infections, in the greater number of which the *Streptococcus hemolyticus* was recovered.

Repeated attempts to obtain pure cultures of the *Streptococcus hemolyticus* on defibrinated blood agar failed, and no growth was obtained on plain plus reaction agar.

Serum from infected individuals did not agglutinate the organism.

The opsonic index gave us no information.

It was noted that with the clearing of the exanthem we were unable to obtain the streptococcus with the same facility from the tonsil crypts, but that in those cases with second attacks the organism could again be found. Believing that this organism was possibly the cause of this particular group of cases, acting by elaboration of toxins from a focus in the tonsils, all patients in whom the streptococcus was found were referred for tonsillectomy as soon as the exanthem, temperature, etc., had subsided. In none of these cases was there a recurrence.

CONCLUSIONS

The presence of an endemic form of erythema multiforme, presenting, in addition to the cutaneous manifestations, certain phenomena common to all the acute infectious diseases, makes plausible an infectious theory of etiology. The presence of a hemolytic streptococcus deep in moderately inflamed tonsils, coupled with what scant knowledge we have of the pathogenicity of this particular organism, lends color to the theory. Absence of organisms in the blood stream and skin lesions would seem to indicate the action of toxins generated in a focus of infection rather than a localization of organisms in the skin. The results obtained by tonsillectomy in streptococcus carriers is not conclusive on account of the small number of cases, but it is at least suggestive.

Symptomatic Treatment.—This form of therapy—often disdainfully characterized as "merely symptomatic"—represents, in my view, the very acme of the medical art.—B. Fantus, M.D.

A CLOSED SYSTEM OF DRAINAGE FOR PENETRATING WOUNDS OF THE CHEST *

MARION A. BLANKENHORN, M.D.
(Orville, Ohio)
Captain, M. R. C., U. S. Army
FRANCE

No satisfactory system of drainage for infected war wounds of the chest has been employed that does not produce a more or less open pneumothorax. It is well known that open pneumothorax seriously disturbs the mechanics of respiration and circulation, and exposes large areas of pleural membrane to infection. It is well known also that open pneumothorax is very seldom cured spontaneously.

Recent war surgery has demonstrated satisfactorily that the pleura is able to overcome a very extensive contamination and even a severe infection in a comparatively short time. But to do so the pleura must be in practically a normal condition otherwise, that is, free from accumulations of air or fluid.

Patients operated on early and left with open drainage invariably have done badly. Patients not operated on have developed empyema or become septic. The middle ground offers the best chance, and patients operated on at a selected time and closed again have done remarkably well.

It is not always possible to provide operation and closure at the critical hour; therefore many cases are seen, especially at the base, which demand drainage just as certainly as they demand being spared the embarrassment of an open pneumothorax, in particular those cases reacting violently to infection when there is a small hemothorax and no pneumothorax. In such a case the pleural membranes, respiration and circulation are relatively normal; but when an open pneumothorax is produced, all the membranes are exposed to infection alike, and the patient is seriously damaged by impaired respiration and circulation. It is quite certain that pleural membranes when in approximation combat infection better than when separated, probably for the same reason that wounds of the tissues heal best when all contaminated surfaces are obliterated and accumulations of serum or blood avoided.

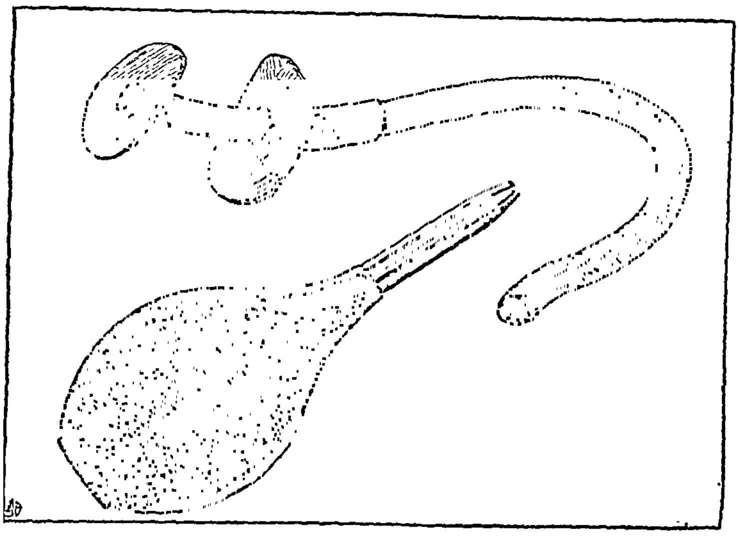

Fig. 1.—Brewer's tube.

Mechanical difficulties have been the chief obstacles in the way of closed drainage. I have seen various devices tried by several confrères in the Royal Army Medical Corps, but when unsuccessful it was usually due to the difficulty in making an anastomosis between a rubber tube and the chest wall. At the Lakeside Unit we have used the Brewer tube with very satisfactory results. This is a rubber tube with flange arrangements (Fig. 1). It is inserted through a rib that has been resected for from one-half to three-fourths inch, and a stab wound through the pleura. It is not necessary to suture the tissues tightly around the tube, for an air tight junction can be made with adhesive tape and dressings together with the flanges of the tube. To maintain a continuous negative pressure on the chest, a stiff rubber bulb is collapsed and connected to the free end of the tube by a glass connection. In civil practice we were using Politzer bags, but at present the rubber bulbs of automobile horns are more available. At operation the surgeon can usually insert the tube through his stab wound with a very little inrush of air, and by manipulating the flanges of the tube prevent a pneumothorax of any appreciable size from forming. What air has entered the chest can be promptly pumped out with the bulb, a large surgical clamp on the tube being used as a valve. By keeping the bulb collapsed and dependent below the wound (Fig. 2), one can make the lung expand normally and at the same time provide a liberal drainage of the pleural sinus.

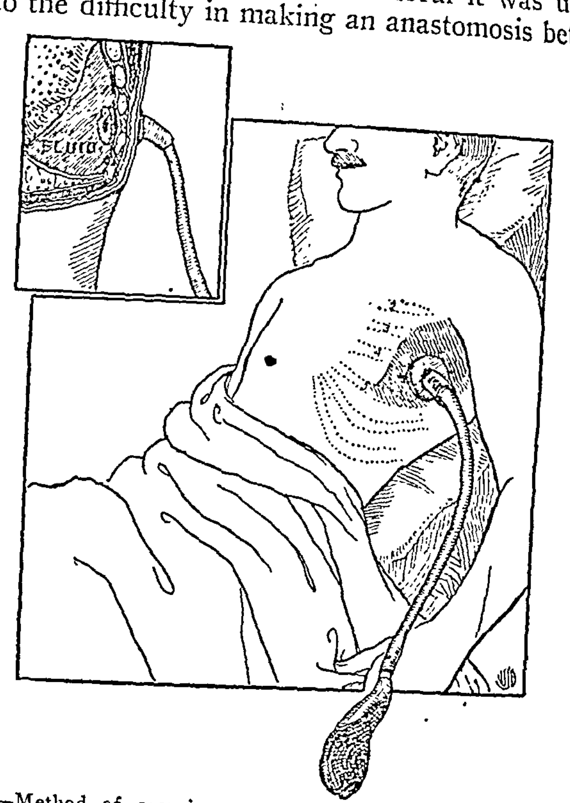

Fig. 2.—Method of securing normal expansion of lung and liberal drainage of pleural sinus.

It has been found that the lung comes down very readily, and breath sounds can be heard almost at once over the space previously occupied by fluid. In all cases a tube will remain tightly in place at least five days, in which time the lung usually has become adherent to the chest wall, and all danger of a large pneumothorax is obviated. After the second or third day, irrigations at a low pressure can be made through the tube by means of the bulb without allowing any

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* From No. 9 (Lakeside U. S. Army) General Hospital, B. E. F.

inrush of air. It is advisable to use very little pressure in irrigating lest the lung be torn loose from its newly formed adhesions to the chest wall. For the same reason, also, the patient should be protected from coughing during the first five days of the drainage. It is apparent that the treatment of these cases demands the early obliteration of the pleural sinus by adhesions; for when open pneumothorax persists, the lung is frequently collapsed and makes no progress, thus allowing a large expanse of pleura exposed to infection, and a cavity very hard to treat.

When the chest has been explored for a foreign body and drainage is found necessary, it is best to make a drainage through a separate opening, especiallly if the surgical wound is contaminated by the original wound of entry.

On chronic empyemas after gunshot wounds, or otherwise when there has been considerable fibrosis of the visceral pleura, a system of closed drainage with suction will expand the lung much better than blowing exercises; but the methods can be combined. In chronic cases after granulations have surrounded the wound, the tube can be removed, cleansed and replaced; but an air tight junction can be made with the help of adhesive tape.

The stiff rubber bulbs we are now using are found to crack and break if collapsed absolutely flat for a long time. Until better bulbs are available, it is best to collapse them partly, but empty and replace frequently.

Captain Paryzek, who has charge of wounds of the chest at the Lakeside Unit, has treated a number of cases by this method very successfully. His report in detail will soon be available.

RELAPSES AFTER APPARENT RECOVERY IN DELAYED TETANUS

W. L. WHITTEMORE, B.A., M.B. (Tor.)
Major, C. A. M. C.
SHORNCLIFFE, KENT, ENGLAND

Especial interest attaches itself to the two cases of delayed tetanus reported herewith, owing to the fact that after apparent recovery had taken place, there occurred at a later date similar though milder attacks of the same disease. These men were wounded, one three and a half months, and the other nine months previous to the onset of tetanus. In the second case, three months after the patient was wounded an operation was performed in the neighborhood of the healed wound which may have resulted in an acceleration of the development of the disease. In both of these cases the local symptoms and signs were in evidence two and three weeks before the onset of the secondary, generalized tetanus. Esau, I think, observed this characteristic in 1910 in cases of shorter incubation periods. From being mildly ill when the signs were localized, both men became dangerously ill when the symptoms became generalized, showing, in sequence, pain, stiffness, clonic contractures in the wound areas, increasing trismus, photophobia, terror of noise and movement, opisthotonos, with later an emprosthotonos, excessive dyspnea, and cyanosis. Eye complications developed—in one a bad keratitis, in the other an iritis and conjunctivitis. The intelligence remained comparatively unaffected until both had reached very critical stages in their illnesses.

REPORT OF CASES

Case 1.—*History.*—Private L. H. B. (No. 69990), Canadian Field Artillery, aged 22, in the service twenty-four months, was wounded by shrapnel, Oct. 1, 1916, in eleven places, and was given antitoxin on the same day in the field ambulance station. He believes that he was not again inoculated against tetanus. In the left leg there were only two wounds, a small one just above the knee anteriorly which healed very quickly, and a larger one on the left buttock which was drained for two weeks. This wound healed in December, 1916, and appeared as a scar the size of a half crown, situated centrally and posteriorly on the left buttock. I draw attention only to these wounds, as they seem to have been the probable sites of the infection.

Jan. 15, 1917, the patient was discharged from a hospital in Birmingham to a Canadian convalescent hospital, where he was kept for twelve hours before being returned to his unit in the Canadian Field Artillery. The next day, Jan. 16, he complained of a slight stiffness of the leg from the hip down. He was soon given a ten days' furlough and when he returned, Feb. 24, he reported sick. Two days later the pain and stiffness in the leg had become more intense and had begun darting across the back. This continued for the next two weeks, and on March 10 his jaws began to be a little stiff. For the next five days he remained mostly in bed, occasionally feeling flushed and headachy. He did not vomit. He began to find out that he had difficulty in arising from the recumbent position. March 16, he awoke from sleep with his head and shoulders twisted over to the left side. The next day this pleurothotonus continued, and he complained of a general rigidity and found that he could walk only by taking very short steps. He was then, March 17, admitted to No. 11 Canadian General Hospital showing some opisthotonos and delirium. Any movement in bed appeared to throw him into convulsions and to cause great pain. He talked very thickly, opening his jaws with difficulty not more than half an inch. Muscle percussion set up clonic contractures. He perspired freely.

Treatment and Course.—Under a general anesthesia he was given 4,500 units of tetanus antitoxin, intraspinally, 3,000 units, intravenously, and 1,500 units, intramuscularly. His maximum temperature was 102, and his pulse was 134.

The next morning, March 18, rigidity was not quite so marked, and two days later there was so much improvement that it was possible to do lumbar puncture under local anesthesia. One day a serum rash appeared on the body, after inoculation. A complicating keratitis developed in one eye at this time. The opisthotonos gradually gave way to an emprosthotonos. During the thirteen days between March 18 and March 31 he had, altogether, 30,000 units of antitoxin intraspinally, 4,500 units intravenously, and 16,000 units intramuscularly.

April 1, the patient showed great improvement. Trismus had almost disappeared, the recti were less tense, and the temperature curve was running closer to normal.

April 10, he was given subcutaneous inoculation of 500 units of antitoxin—the first in two weeks—and this was followed by only a slight serum reaction.

A note, April 15, stated that the patient was greatly improved, was free from pain and was sitting out of bed. The keratitis seemed no better. His temperature had been normal for fifteen days.

May 29, the patient was transferred to a special hospital for further eye treatment, but the keratitis improved only slowly. His general condition was hardly improved until four months later, when he began to have tremors and some stiffness in the same leg, especially so after resting it.

Relapse.—This showed itself four months later, September 13, and within ten days the condition had become so aggravated that the patient could stand up and begin walking only with great difficulty.

On the eleventh day of the relapse, September 24, he felt some stiffnesss in the jaws. Two days later trismus was marked, and the deep reflexes were markedly exaggerated. He also complained of headache and general stiffness. He

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SATURDAY, DECEMBER 14, 1918

THYROID TOXEMIA AND EXOPHTHALMIC GOITER

Exophthalmic goiter has long been ascribed to a condition of hyperthyroidism despite the difficulties of interpretation which this hypothesis entails. Toxic symptoms, even including exophthalmos, can be induced by ingestion of large quantities of thyroid extract. This well established fact is, perhaps, the most compelling indication for the hyperthyroid theory. Nevertheless it has not sufficed to establish any acceptable or effective uniformity in the mode of treatment; and the dissatisfaction with the attempts to explain all the varied symptoms of exophthalmic goiter as the outcome of hyperactivity of the endocrine glands is manifest in current discussions of the pathogenesis and therapy of this malady.

Reviewing the criticisms of the theory of hyperthyroidism in relation to so-called exophthalmic goiter, Janney[1] has reminded us that the typical exophthalmic goiter contains only from a fiftieth to a twentieth of the total active iodin present in normal thyroids; whereas more, not less, iodin might reasonably be expected to occur in hyperfunctioning glands. Exophthalmic goiter has been reported not infrequently in families having hypothyroid members; sometimes both kinds of symptoms—supposedly hyperthyroid and hypothyroid—are observed in the same person.[2] Contrary to the implications of the hyperthyroid theory, cases of exophthalmic goiter without tumor are not extremely uncommon. Despite the theory, thyroid medication has been reported to benefit some patients suffering from the disease. Finally, similar metabolic disturbances may be present in both alleged hyperthyroid and hypothyroid conditions; the blood picture of exophthalmic goiter is practically identical with that of myxedema and cretinism, so that, as Janney comments, if these conditions are diametrically opposed, such a striking similarity in the metabolic and hematologic findings would scarcely be expected.

Accordingly, Janney[1] has proposed to discard the seemingly inadequate hyperthyroid explanation and substitute for it "dysfunction" of the thyroid to explain the phenomena. In the light of this we can now understand that some of the symptoms of exophthalmic goiter—the thyroid enlargement, cutaneous symptoms, scleroma, osseous changes, and special metabolic manifestations, such as hypoglycemia[3]—are identical with those of a hypothyroidism attributable to a poorly functioning gland. They are truly symptoms of thyroid deficiency which have usually been disregarded in the symptomatology. The more familiar manifestations—psychic stimulation, tremor, tachycardia, increased basal metabolism, etc.—are toxic symptoms which Janney assigns to the liberation of intermediate products of poisonous nature, perhaps owing to the incapacity of the glands to produce the normal thyroid hormone. In exophthalmic goiter, then, a toxic substance is circulating in the system. With a defective endocrine secretory function postulated, it becomes evident how hypothyroid and toxic symptoms may be discovered concomitantly.

With this tentative explanation it becomes clear, furthermore, how clinical improvement may follow suitable—not excessive—thyroid dosage in some cases, particularly when the thyroid deficiency is the etiologically prominent though perhaps not symptomatically conspicuous factor. It is also evident, on the other hand, that the introduction of a normal hormone from without to a dysfunctioning as well as underfunctioning endocrine organ "may not necessarily lead to a cessation of the chemopathologic processes causing the toxic symptoms" of exophthalmic goiter. Probably thyroid treatment of these toxic cases is inadvisable; but when the deficiency symptoms appear, thyroid therapy may actually be indicated,[4] despite the objection which the still current hyperthyroid hypothesis interposes. Is it too much to expect that the stimulus of Janney's recently expressed views[1] will lead to new clinical and therapeutic investigations untrammeled by the handicap of preconceived notions?

THE MINIMAL FAT RATION

During the war the reminder to "save fats" confronted the American citizen many times a day in the form of public announcements through placards, billboards and popular literature, so that it naturally became a part of his war-time creed. One reason for heeding the admonition was furnished by the experience of persons who had been in Europe since the beginning of the war. Many of them were obliged to live on a scanty allowance of fats, and they have reported how disagreeable the deprivation had become. If we may believe the conclusions of extremely careful observers, the lack of fat was perhaps the cause of much of the dietary discomfort in Germany and the element that made the German most dissatisfied with his rations. Indeed, we are told that even when the diet was sufficient, it was not satisfactory if very low in fat.

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[1] Janney, N. W.: Studies in Thyroid Therapy: The Effects of the Thyroid Hormone as Determined by a Clinical, Metabolic and Dietetic Investigation: New Points of View on Thyroid Function in Health and Disease, Arch. Int. Med., August, 1918, p. 187.

[2] Bertine, E.: Med. Rec., New York, 1916, **90**, 895.

[3] Thyroid Functions and Therapy, editorial, The Journal A. M. A., Nov. 30, 1918, p. 1826.

[4] Halverson, J. O.; Bergeim, Olaf, and Hawk, P. B.: A Metabolism Study of Goiter, with the Effect of Thyroid and Thymus Treatment, Arch. Int. Med., December, 1916, p. 800.

The apparent reasons for this need not be detailed in this connection. In part we must reckon with the derangement of the dietary habits of people accustomed to liberal supplies of fat. Lack of them alters profoundly the cuisine, the mode of preparation and flavor of familiar items of the diet. Psychologic factors are brought into play as soon as the eating habits of persons are considerably modified. From a more purely physiologic standpoint it must be remembered that the fats are the most concentrated by far among all the foods. They produce a peculiarly satisfying effect, expressed in the layman's statement that they "stay by" one and stave off the feeling of hunger.

By way of contrast and contrary to such extolled virtues of fats, it has recently been suggested that these foods may for the most part be dispensed with, without serious detriment to adult man.[1] In seeking a rational course we may expect to find wisdom in the proposals of the Interallied Scientific Food Commission, of which the American representatives were R. H. Chittenden and Graham Lusk. This group of representative physiologists concluded that the desirable daily minimal ration of fat for an average man should be 75 gm., or 2⅝ ounces. This is considerably below the ascertained intake of men at hard work in cold climates. American lumbermen consume up to 388 gm. (13½ ounces) a day, and Swedish woodcutters from 7 to 13½ ounces, while the ordinary European is content with quantities varying from 1½ to 5½ ounces.

According to the *British Medical Journal,* Starling, who is also a member of the Interallied Commission, has reached the conclusion that although, strictly speaking, there is no evidence for an absolute physiologic minimum of fat in an otherwise abundant diet, the development of the human alimentary canal makes it necessary in practice to supply a considerable proportion of fat in food. In the diet of the infant at the breast, fat gives more than 50 per cent. of the total energy, and the child requires 2 ounces a day of fat up to 10 years. It appears to the *British Medical Journal* that the minimal figure for adults, given by the Scientific Commission, may be diminished without serious detriment to the health of the individual, though probably not without inconvenience and diminution of efficiency, but that it may be considerably increased without interfering with efficiency or with health.

THE PROGRESS OF PREVENTIVE MEDICINE

The most outstanding feature of the war from the medical standpoint has been the really remarkable results obtained in the prevention of disease. War on an unparalleled scale has been going on for more than four years, waged under conditions in themselves calculated to initiate and spread contagious diseases; yet with the exception of typhus fever in Serbia and the recent epidemics of respiratory disease there have been no extensive epidemics such as have occurred in previous wars. Typhoid fever which, up to the time of the Russo-Japanese War, had been the scourge of armies in the field, has been almost a negligible quantity. In the Boer and Spanish-American wars, typhoid killed and incapacitated thousands. In the Russo-Japanese War the real beginning was made and typhoid checked. In the war just over, it has been entirely robbed of its sting. As with typhoid, so with the other war pestilences. Trench fever after a short time was brought under control through scientific investigation. It has been not only by preventive measures in warding off epidemics but also by close attention to personal hygiene that health in the armies on the western front has been maintained at a high standard. Preventive medicine during the past twenty years has progressed apace, and its value has been greatly emphasized by its strong showing in the war. The experience thus gained should now be put to good use in civilian communities.

If masses of men enduring the stress and strain of modern warfare can be kept healthy by the enforcement of sanitary and hygienic measures, it will certainly be reasonable to suppose that the general health of a civilian population cannot fail to be greatly benefited by the adoption of similar methods.

In Great Britain a strong movement is under way for the prompt establishment of a ministry of health. The medical profession and most of the public are convinced, first, that much disease is preventable and, secondly, that it should be prevented. Moreover, members of the medical profession and the people are agreed that this object will be best attained by the formation of a ministry of health. However, the views of the man in the street and of the thoughtful medical man differ somewhat widely as to exactly what the functions of a ministry of health should be. The British public and apparently some medical men are imbued with the idea that such a ministry will provide the machinery whereby the sick may be treated at the cost of the state and that physicians engaged in this work will be a species of government servant. The medical profession, as a whole, on the other hand, regards the matter from quite a different aspect. It is recognized that a national department of health will be concerned chiefly with preventive medicine, and in the opinion of perhaps the majority of medical men its ideal form will probably be that of a bureau in which scientific medicine will hold sway and, in consequence, the care for the health of the people will be conducted on strictly scientific lines.

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[1] The Daily Press and the "Futilities of Contemporary Science," editorial, THE JOURNAL A. M. A., Sept. 28, 1918, p. 1060.

The scope of preventive medicine has widened immensely; it is the branch of medicine fraught with almost unlimited potentialities and possibilities. Preventive medicine is not now restricted to purely sanitary measures, the supervision of drainage, sewage and water supply, the destruction of disease-bearing insects and so on. As a matter of fact, the science of preventive medicine comprises every method that may prevent disease. Personal and domestic hygiene are factors of the first importance in the improvement of public health. Because preventive medicine covers so much and because it is essential to the happiness and prosperity of a nation, the demand is arising in many civilized countries for the establishment of national departments of health. The only way by which the object can be achieved is by earnest and intelligent cooperation between the general public and the medical profession.

SCURVY AND ANTISCORBUTICS

The evidence that the antineuritic and antiscorbutic properties in foods are not identical, since they behave quite differently toward absorbents, was recently mentioned in these columns.[1] This raises the question as to the comparative etiology of the types of disorder corrected by the use of antineuritic and antiscorbutic foods, respectively. Polyneuritis, as it is exemplified in the disease beriberi, is today admitted to be a dietary deficiency disorder attributable to the lack of a specific vitamin in the regimen. Is scurvy a disease of a different sort, or does it also correspond to the type lately designated as an avitaminosis?

McCollum and Pitz[2] reject the vitamin hypothesis in explanation of the genesis of scurvy. They insist that the disease is the outcome of faulty intestinal conditions; that it is not due to any deficiency in the diet, but rather is the result of chronic constipation caused by the physical texture of a "scurvy-producing" diet. The contention of these investigators is based on observations on guinea-pigs, the classic animals for the production of experimental scurvy. These animals are alleged to need foods that produce a bulky mass of easily eliminated feces. Thus guinea-pigs that die of scurvy generally show an empty stomach and a gorged cecum, we are told; and it is further stated that the scurvy can be both prevented and cured by the administration of laxatives, without any other alteration in the diet.

If the existence of a condition of chronic intestinal stasis is sufficient to account for so serious a malady as scurvy, without taking into account any specific qualities of the food, surely this information is of the first importance for human therapy and prophylaxis. It is hard to believe that the antiscorbutic effect of the conventional small portion of orange juice can reside solely in a laxative effect of this substance. However, contradictory evidence is beginning to appear in the scientific literature. Chick, Hume and Skelton[3] of the Lister Institute of Preventive Medicine in London deny that chronic constipation is a constant concomitant of guinea-pig scurvy. Instances are cited in which modifications in diet, to which no extra laxative effect can be attributed, have cured or prevented the disease. Experiments are also described in which the administration of a laxative alone has failed to cure or prevent scurvy.

To many unbiased students the chief obstacle to the acceptance of a "vitamin hypothesis" for the genesis of scurvy has been the fact that the disease manifests itself even when milk is included in the dietary. Popularly, milk is at present looked on as an exceptionally abundant source of all forms of vitamins. We have already called attention to the researches of Osborne and Mendel[4] showing that milk is not as rich in the water-soluble vitamin as one not familiar with the experimental evidence for this property of the food might assume. Now we are further told by the British investigators that "milk is evidently a food poor in the antiscurvy accessory factor, and a ration large in comparison with that of other antiscorbutic materials is necessary to afford satisfactory protection from scurvy."

As a "working theory," it seems safer at present to postulate that experimental scurvy, such as can be induced in the guinea-pig, is due to the deficiency in the diet of a specific food factor of the vitamin type. The latest investigations lend favor to the hypothesis that it is analogous in etiology and general method of cure with human scurvy. Chick, Hume and Skelton, making application of these facts and the known sensitiveness of the antiscorbutic property of milk to heat, call attention to the risk, in infant feeding with cow's milk, of "tampering with a substance which even in the fresh condition is but feebly antiscorbutic." In order to give the child optimal conditions, it is urged that whenever milk is heated in any way, or dried, an additional source of antiscorbutic vitamin should be provided. Experience points to orange juice as the most suitable source, and the precaution of using it is the wisest measure so long as the scientists disagree.

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[1] The Nonidentity of Antineuritic and Antiscorbutic Factors in Nutrition, editorial, The Journal A. M. A., Nov. 30, 1918, p. 1826.

[2] McCollum, E. V., and Pitz, W.: Jour. Biol. Chem., 1917, 31, 229.

[3] Chick, Harriette; Hume, Eleanor M., and Skelton, Ruth F.: The Antiscorbutic Value of Cow's Milk, Biochem. Jour., 1918, 12, 131.

[4] Osborne, T. B., and Mendel, L. B.: Milk as a Source of Water-Soluble Vitamine, Jour. Biol. Chem., 1918, 34, 537. More Milk for Vitamins, editorial, The Journal A. M. A., Nov. 9, 1918, p. 1582.

Nonessential Consumption.—The best definition that I have heard of nonessential consumption is "all consumption not required for maintaining physical efficiency."—H. G. Moulton, *Economist.*

Current Comment

THE GOVERNMENT AND THE HEALTH OF WORKERS

The economic independence of a country depends largely on the efficiency of its production. The efficiency of modern industry has resulted from the development and wise use of such factors as raw materials, machinery, production processes, transportation, trade relations and the like. A still greater efficiency will come when the same careful attention is given to human beings as factors in production. Scientific methods are being applied to reduce wastes to a minimum; and yet there are no wastes comparable in value and costliness with the waste of labor turnover. Though war is the arch destroyer, happily it compels conservation and construction. America's participation in the war has made us realize the value of human resources. Yet even here we have been more concerned about aeroplanes or shells that were found defective than about the hundreds of thousands of young men whom our draft boards found unfit for military service. Our industrial army is recruited from the same population as are our soldiers and sailors. Physical defect lessens the efficiency of a working man quite as it does that of a fighting man. Of course, a physically handicapped man who cannot be safely used in the Army may be efficiently placed in industry, but placement is another of industry's problems awaiting solution. The federal government is sensitive to the urgency of the problems relating to the health and physical fitness of working people and has created in the Department of Labor a Working Conditions Service, one division of which is cooperating with the United States Public Health Service in a study of industrial health problems.[1] The health hazards of modern industry present a much more difficult problem than do the accident hazards. The economic losses due to illness and decreased physical energy far outweigh those caused by accidents. It is not enough to discover the diseases directly traceable to occupation and to develop means for their prevention. There is the far more delicate and difficult task of determining the relation between health and efficiency and of preventing waste by promoting health. Extensive research should be, and we believe is, an essential part of the program that the government contemplates. Careful study should be made of plant sanitation, of the health of employees, of the medical work now being done in industry, of occupational injuries, of the relation of hours of labor to health and production, and of provisions for safety. Out of this effort ought to come established scientific principles on which the working conditions of the future may be based. We must not, however, lose sight of the fact that many of the defects of adults result from remediable conditions of children. It is to be hoped that in a comprehensive study of so important a question as the health of working people, the government will continue to give especially careful consideration to the bearing that the hygiene of childhood might have on the health and efficiency of our adult population.

PRACTICAL ECONOMY

Last year, attention was called editorially to the large increase in the cost of production of The Journal on account of abnormally high prices of paper, supplies, labor, postage, etc. In addition, letter postage increased 50 per cent. To quote: "Under the new postage rate the cost for sending the customary bills for Fellowship and subscriptions and later receipts would total over $4,000. One half of this can be saved if each Fellow and subscriber will remit without being individually notified by mail. It is believed that many will gladly do this. Under the circumstances, such notification will not be sent on the first of the year as heretofore." In lieu of sending bills, a remittance slip was inserted in The Journal. The result was most satisfactory. More than 20,000 sent in their dues and subscriptions without waiting for the bill. This year the same plan will be followed and next week a slip will be inserted in The Journal.

THE NATIONAL BOARD OF MEDICAL EXAMINERS

During the past two weeks the National Board of Medical Examiners[1] held its sixth examination, conducting it simultaneously in New York and Chicago. In Chicago, out of fifty-eight who applied—mostly interns in hospitals—only thirteen appeared to take the examination. The explanation is that these interns could not leave their hospital duties for the time required, and that substitutes for the hospital duties could not be obtained. That so few recent graduates in medicine avail themselves of the privilege of taking this examination is surprising, since in after years the National Board's certificate is sure to mean much to them. This certificate has already received recognition, either by board rulings or by amendments to the medical practice acts, in eleven states;[2] and in several others, efforts to amend the practice acts will soon be made. The holder of this certificate is eligible for the Medical Corps of the United States Army and the United States Navy, subject only to his passing the required physical examination. As a result of the war there is bound to be a closer union between the medical men of the Allied nations, making it probable that in time this certificate will receive recognition in foreign countries. Even now, the National Board is planning to make a trip to France, where the examination of a number of American physicians can be witnessed by representatives of England, France and Italy, with the hope that, based on the certificate of this board, reci-

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[1] General News, this issue, p. 2008.

[1] A descriptive statement regarding this board is contained in the Report of the Council on Medical Education to the House of Delegates of the American Medical Association. See The Journal, June 15, 1918, p. 1846.

[2] These states are Colorado, Delaware, Idaho, Kentucky, Maryland, New Hampshire, North Carolina, North Dakota, Pennsylvania, Rhode Island and Vermont.

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procity in medical practice can be arranged with those countries. The certificate already stands as a badge of merit to its possessor. Up to, but not including, the present examination, the board has examined ninety-three applicants, of whom seventy-two passed and twenty-one (22.6 per cent.) failed. This high percentage of failures shows at once the thorough character of the examination. For, considering the fact that only graduates of Class A medical schools are admitted to the examination, this percentage of failures is high. Applicants must also have completed an internship in a hospital.

THE CITRIC ACID IN MILK

"Milk is vital to national health and efficiency." We can conserve wheat and meat, sugar and fats, and be none the worse for it, but we must use milk, says the Food Guide of the United States Food Administration.[1] The chemist is still far from knowing all about this unique food. Only a few persons adequately realize that, in addition to the familiar nutrients, milk contains in small quantities a considerable number of organic substances. Thus there are phosphatids[2] and those subtle, little understood constituents at present termed vitamins. It is thirty years since citric acid was discovered as a normal constituent of cow's milk.[3] Although the substance is often mentioned in textbooks on the chemistry of milk, the statements usually made are of the vague sort that characterize information transmitted in the traditional way. Of the accuracy of the assertion that citric acid is present in milk there can no longer be any doubt. At the laboratory of agricultural chemistry in the University of Wisconsin, Sommer and Hart[4] have recently isolated and identified the compound anew, and have ascertained the content to amount to approximately 0.2 per cent. of the milk, or 2 per cent. of the milk solids. Citric acid is a recognized constituent of various "acid" fruit juices and vegetables, the familiar antiscorbutic properties of which have actually been ascribed to it.[5] Sommer and Hart have pointed out that if citric acid actually is an antiscorbutic and if there was a decrease in the content of this acid on heating milk, this fact might be used to explain, as often stated, why heated milk should be more conducive than raw milk to the production of scurvy. However, the experiments show that citric acid is not destroyed in the heating of milk even in an autoclave at 15 pounds pressure for one hour. Furthermore, the citric acid salts of milk are not changed to an insoluble form on heating. Thus the question of the physiologic function of citric acid in the diet remains unanswered.

Medical Mobilization and the War

Personnel of the Medical Corps

For the week ending December 6, there were in the Medical Corps 31,104 officers, a decrease of ninety-three since the previous week. This personnel includes three major-generals, five brigadier-generals, 205 colonels, 441 lieutenant-colonels, 2,426 majors, 10,103 captains and 17,921 lieutenants. There were in active service 30,379, a decrease of twenty-nine since the previous week. Discharges to date include 3,674 officers.

Promotions for Medical Officers

On December 3 Col. Walter D. McCaw and Major-Gen. Robert E. Noble were nominated for brigadier-general in the Medical Corps of the Regular Army. The rank of major-general held by Brigadier-General Noble was for the period of the emergency only.

Field Hospital Arrives in Russia

Field Hospital and Ambulance Company No. 4, commanded by Major John H. H. Scudder, M. C., U. S. Army, Philadelphia, which left the Philippines, September 6, for duty with the American Expeditionary Forces in Siberia, arrived in Vladivostok, September 14.

Awards for Heroism

The Distinguished Service Cross has been awarded to Lieut. James G. Hall, M. C., U. S. Army, assigned, 360th Infantry, "For extraordinary heroism in action near Montoville, Sept. 12 and 13, 1918. In spite of severe wounds, including two broken ribs, received in his first day of action, Lieutenant Hall stayed at his post for thirty-six hours administering first aid to wounded throughout the combat. Numbers of lives were saved by his devotion to duty."

Surgeon-General Relinquishes Control of Medical Schools and Intern Service

A circular letter dated December 2 from the Surgeon-General to deans of medical schools gives notice that the control over them through the Medical Enlisted Reserve Corps has been relinquished. The control was based on the draft, and medical students were enrolled in the Medical Enlisted Reserve Corps so that they might be retained at their studies so long as their scholarship remained satisfactory. The cessation of the draft makes this control no longer necessary and it has been relinquished. It is stated, however, that since students voluntarily enrolled in the Medical Enlisted Reserve Corps "for the duration of the emergency," they will be subject to the terms of their enrolment until it has been officially declared that the "emergency" has ceased. For all practical purposes, however, the students are on the same basis as civilians. It is only "in time of actual or threatened hostilities" that they would be called to active service, the probability of which is so remote that it may be disregarded. The Medical Department surrenders to the schools all supervision over their students from an educational standpoint.

The Surgeon-General has also relinquished the supervision of intern service in hospitals. Attention is called, however, to the fact that, where internships have been approved by the Surgeon-General, an agreement was entered into between the interns and the hospitals in which they were serving, and that a cessation of supervision by the Surgeon-General will not in any way impair the obligations imposed by these agreements.

Wounded and Sick Soldiers from A. E. F. to Be Placed in Hospitals Near Homes

The Surgeon-General announces that the Hospital Division has perfected plans for the care of sick and wounded soldiers from overseas in hospitals in the sections from which they were inducted and which will not be more than 300 miles from the relatives of the patients. The Hospital Division now has seventy-five of these hospitals with a capacity of 104,231 beds which were turned over to the Surgeon-General by the general staff; these do not include the fifteen hospitals located at the ports of debarkation at New York and Newport News which have a bed capacity of 22,066.

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[1] This excellent booklet, entitled "Food Guide for War Service at Home," was prepared under the direction of the U. S. Food Administration, with a preface by Herbert Hoover, and is published by Charles Scribner's Sons, New York, 1918.

[2] The Lecithins of Milk, editorial, The Journal A. M. A., Nov. 13, 1915, p. 1734.

[3] Soxhlet, F., and Henkel, T.: München. med. Wchnschr., 1888, 35, 328.

[4] Sommer, H. H., and Hart, E. B.: Effect of Heat on the Citric Acid Content of Milk, Jour. Biol. Chem., 1918, 35, 313.

[5] Funk, Casimir: Jour. State Med., 1912, 20, 341. Gerstenberger, H. J.: Am. Jour. Med. Sc., 1918, 155, 261.

These hospitals are located in sixteen districts as follows:

No. 1.—General Hospital No. 10, Boston, Mass.; General Hospital No. 16, New Haven, Conn.; General Hospital, East Norfolk, Mass.; General Hospital No. 30, Plattsburg Barracks, N. Y.; Base Hospital, Camp Devens, Mass.

No. 2.—General Hospital No. 1, Williamsbridge, N. Y.; General Hospital No. 38, East View, N. Y.; Base Hospital, Camp Upton, N. Y.

No. 3.—General Hospital No. 3, Colonia, N. J.; General Hospital No. 4, Fort Porter; General Hospital No. 5, Fort Ontario, N. Y.; General Hospital No. 8, Otisville, N. Y.; General Hospital No. 9, Lakewood, N. J.; General Hospital No. 11, Cape May, N. J.; General Hospital No. 13, Dansville, N. Y.; General Hospital No. 37, Madison Barracks, N. Y.; Base Hospital, Camp Dix, N. J.

No. 4.—General Hospital No. 2, Fort McHenry, Md.; General Hospital No. 7, Roland Park, Md.; General Hospital No. 31, Carlisle, Pa.; Walter Reed General Hospital, Takoma Park, D. C.; Base Hospital, Camp Meade, Md.

No. 5.—General Hospital No. 17, Markleton, Pa.; General Hospital No. 22, Richmond, Va.; General Hosiptal No. 24, Pittsburgh, Pa.; Base Hosiptal, Camp Lee, Va.

No. 6.—General Hospital No. 12, Biltmore, N. C.; General Hospital No. 18, Waynesville, N. C.; General Hospital No. 19, Azalea, N. C.; General Hospital No. 23, Hot Springs, N. C.; Base Hospital, Camp Greene, N. C.; Base Hospital, Camp Sevier, S. C.; Base Hospital, Camp Wadsworth, S. C.; Base Hospital, Camp Jackson, S. C.

No. 7.—General Hospital No. 6, Fort McPherson, Ga.; General Hospital No. 14, Fort Oglethorpe, Ga.; Base Hospital, Camp Gordon, Ga.; Base Hospital, Camp Hancock, Ga.; Base Hospital, Camp Wheeler, Ga.; Base Hospital, Camp McClellan, Ala.; Base Hospital, Camp Sheridan, Ala.

No. 8.—Base Hospital, Camp Sherman, Ohio.

No. 9.—General Hospital No. 25, Fort Benjamin Harrison, Ind.; General Hospital, No. 35, West Baden, Ind.; Base Hospital, Camp Zachary Taylor, Ky.

No. 10.—General Hospital No. 36, Detroit, Mich.; Base Hospital, Camp Custer, Mich.

No. 11.—Cooper-Monatha Hotel, Chicago, Ill.; General Hospital No. 28, Fort Sheridan, Ill ; Base Hospital, Camp Grant, Ill.

No. 12.—Army and Navy General Hospital, Hot Springs, Ark.; General Hospital No. 33, Fort Logan H. Roots, Ark.; Base Hospital, Camp Pike, Ark.; Base Hospital, Camp Beauregard, La.; Base Hospital, Camp Shelby, Miss.

No. 13.—General Hospital No. 26, Fort Des Moines, Iowa; General Hospital No. 29, Fort Snelling, Minn.; Base Hospital, Camp Dodge, Iowa.

No. 14.—General Hospital, Fort Bayard, N. M.; General Hospital No. 20, Whipple Barracks, Ariz.; General Hospital No. 21, Denver, Colo.; Base Hospital, Camp Cody, N. M.; Base Hospital, Fort Riley, Kan.

No. 15.—General Hospital No. 16, Corpus Christi, Texas; Base Hospital, Camp Logan, Texas; Base Hospital, Camp Travis, Texas; Base Hospital, Fort Sam Houston, Texas; Base Hospital, Camp MacArthur, Texas; Base Hospital, Camp Bowie, Texas; Base Hospital, Fort Sill, Okla.; Base Hospital, Fort Bliss, Texas.

No. 16.—General Hospital No. 27, Fort Douglas, Utah; Letterman General Hospital, San Francisco, Calif.; Base Hospital, Camp Kearney, Calif.; Base Hospital, Camp Fremont, Calif.; Base Hospital, Camp Lewis, Wash.

The 50,000 wounded which it is expected will be sent to these hospitals at the end of four months will be transported from the hospitals at the ports of debarkation in special hospital trains when unable to travel in Pullman sleepers. There are four of these trains composed of seven cars each with a capacity of 172 to each train. Special hospital kitchen cars, of which there are twenty, will be attached to the Pullmans containing patients.

Since it has acquired the base hospitals the Hospital Division has recommended that the following properties which were to have been used as general hospitals, be returned to their owners:

New Field Museum, Chicago, Ill.
Exposition Park, Rochester, N. Y.
State School for the Deaf, Columbus, Ohio.
Richman Brothers Building, Cleveland, Ohio.
Deutsches Turnverein, Cleveland, Ohio.
High School, Cincinnati, Ohio.
City Sanatorium, St. Louis, Mo.
Ford Building, Milwaukee, Wis.
Brockman Store Building, Milwaukee, Wis.
Badger State Sales Co. Building, Milwaukee, Wis.
Woodstock Apartments, Milwaukee, Wis.
State School for the Blind, and Galloway Hospital, Nashville, Tenn.
Sophie Newcomb School and Tulane University buildings, New Orleans, La.
Byberry Farms, Philadelphia, Pa.
New Orleans Elks' Hospital.
Seaview Hospital, New York City.
Ford Building, Des Moines, Iowa.
St. Catherine's Home, Des Moines, Iowa.
North Brothers Island, N. Y.
Catholic Orphan Society, New York City.

HONORABLE DISCHARGES AND RESIGNATIONS, MEDICAL CORPS, U. S. ARMY

ALABAMA

Ashford—Box, C. C.
Brewton—Farish, L. B.

ARIZONA

Bisbee—Durfee, R. B.
Kingman—White, T. H.

ARKANSAS

Hartford—Butler, V. V.
Little Rock—Ball, W. F.

CALIFORNIA

Loma Linda—Herzer, F. E.
Long Beach—Robinson, T. C.
Los Angeles—Smith, R. N.
  Stolz, H. C.
Monrovia—Pottenger, J. E.
San Diego—Magee, A. C.
  Wessels, A. B.
Santa Barbara—Luton, G. R.
South Pasadena—Metcalf, C. F.
Whittier—Tebbetts, H. N.
Wilmington—Kay, G. L.

CONNECTICUT

Willimantic—Jenkins, C. A.

GEORGIA

Carrollton—Fitts, C. C.
Columbus—Sappington, J. S.

ILLINOIS

Bible Grove—Webster, E. C.
Chicago—Burk, W.
  Sepple, E. G.
  Wilkins, C. D.
Dundee—Maha, F. J.
Galesburg—Longbrake, G. A.
Iuka—Carneal, T. E.
Jacksonville—Woltman, H. C.
Rochester—Fortune, H. C.
Roodhouse—Hamilton, L. O.

INDIANA

Bloomington—Holland, J. E. P.
Indianapolis—Jackson, J. L.
Rockville—Sweany, R. B. T.
Terre Haute—Frisz, J. A.

IOWA

Clinton—White, H. A.
Sigourney—Kemp, M. E.

KANSAS

Belle Plaine—Rudolph, J. F.
Independence—Smith, T E.
Madison—Lose, F. D.

KENTUCKY

Boston—Harned, H. S.
Dublin—Ray, D. H.
Hickman—Hubbard, J. M.

MAINE

South Windham—Moulton, O. C.

MASSACHUSETTS

Palmer—Cheney, H. C.

MICHIGAN

Detroit—Hirschman, L. J.
Flint—Willoughby, L. L.
Mount Clemens—Lenfesty, F. K.
Sturgis—Burdeno, F. R.

MINNESOTA

Duluth—Chapman, T. L.
Minneapolis—Fox, J. M.
  Smith, A. E.
Rochester—Bumpus, H. C., Jr.

MISSOURI

Columbia—Shaeffer, W. R.
[illegible] C.
[illegible] R. H.
[illegible]ville—Hill, E. C.
St. Louis—Eberlein, E. W.
  Stein, W. F.

NEW HAMPSHIRE

Newmarket—Monge, A. J.

NEW JERSEY

Hackettstown—Randall, R. W.
Jersey City—McGiverin, E. D.
Newark—Smith, J. J.
Toms River—Brouwer, F.

NEW MEXICO

Las Cruces—Gerber, C. W.

NEW YORK

Astoria—Brown, L. M.
Bayside—Houghton, H. A.
Brooklyn—Eis, B. M.
  O'Reilly J. A.
  Washnitzer, F.
Buffalo—Bauckhaus, H. H.
  Lothrop, E. P.
  McKee, T. H.
New York—Ellner, D.
  Peet, E. W.
Port Henry—Canning, T. H.
Rochester—Lloyd, J. J.
  Wolff, W. B.

NORTH CAROLINA

Raleigh—West, L. N.

NORTH DAKOTA

Kenmare—Critchfield, L. R.
  Ewing, F.
Kintyre—Simon, J.

OHIO

Barnesville—Sheppard, D. O.
Cleveland—Mahrer, H. A.
Dayton—Courtwright, L. R.
Tiffin—Leister, R. B.
Vanlus—Metzler, W. M.

OREGON

Oregon City—Mount, G.
Portland—Odell, J. M.

PENNSYLVANIA

Beaver—Wilson, F. S.
Bridgeville—Hopper, A. W.
Litita—Yoder, M. H.
Philadelphia—Bricker, S.
  Divisson, A. H.
  McNeer, R. L.
Pittsburgh—Pool, S. N.
Reading—Gruver, M. E.
Scranton—Cornell, H. D.
Washington—Lynch, H. P.
Webster—Rupert, D. A.
Wilkes-Barre—Collmann, X. K.
Wilkinsburg—Dixon, J. W.
Woodlawn—Bryson, W. S.

SOUTH CAROLINA

Charleston—Mitchell, J. C.
Columbia—Whitten, B. O.
Georgetown—Gaillard, W. M.
Scotia—Lawton, F. A.
Townville—Hobson, J. M.

SOUTH DAKOTA

Langford—Cook, J. F. D.

TENNESSEE

Memphis—Simpson, W. L.

TEXAS

Bells—Shanks, R. C.
Houston—Scott, J. W.
Texarkana—Peterson, A. L.
Weizer—Potthast, O. J.

UTAH

Salt Lake City — Henneberger, C. E.
  Hinkley, E. E.

WEST VIRGINIA

Parkersburg—Gaynor, H. E.
Ripley—Rymer, T. E.
Wheeling—Cracraft, L. K.

WISCONSIN

Darion—O'Brien, H. N.
Mosinee—Towle, G. E.

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Alabama

To Camp Devens, Mass., base hospital, from Fort Oglethorpe, Capt. J. H. EDMONSON, Birmingham.

To Camp Sevier, S. C., to examine troops for cardiovascular diseases, from Camp Crane, Lieut. A. L. KELLY, Birmingham.

To Fort Snelling, Minn., from Camp Crane, Lieut. S. C. WOOD, Birmingham.

To Newport News, Va., from Camp Bowie, Lieut. J. T. CALLAWAY, Birmingham.

To Richmond, Va., from Fort Oglethorpe, Capt. A. W. RALLS, Gadsden.

California

To Detroit, Mich., from Camp Crane, Lieut. J. H. SCHAEFER, Los Angeles.

To Lakewood, N. J., for instruction, from Camp Crane, Lieut. A. H. CURRIE, Los Angeles.

To San Francisco, Calif., Letterman General Hospital, from Camp Fremont, Lieut. V. L. ROCHE, San Francisco.

The following orders have been revoked: *To Camp Crane, Pa.*, base hospital from Camp Fremont, Capt. P. PATEK, San Francisco; Lieut. T. L. BLANCHARD, San Jose.

Connecticut

To Camp Beauregard, La., from Fort Oglethorpe, Lieut. W. E. CRAMM, Mansfield Center.

To Camp Sheridan, Ala., to examine troops for cardiovascular diseases, from Lakewood, Lieut. H. A. SOLOMON, Waterbury.

To Fort Sheridan, Ill., from New Haven, Major H. G. MAUL.

District of Columbia

To Plattsburg Barracks, N. Y., from Camp Jackson, Lieut. D. G. DICKERSON, Washington.

To Washington, D. C., Surgeon-General's Office, from Raleigh, Major J. J. KINYOUN, Washington.

Florida

To Camp Sevier, S. C., to examine troops for cardiovascular diseases, from Camp Crane, Lieut. C. R. MARNEY, Tampa.

To Camp Shelby, Miss., base hospital, from Camp Joseph E. Johnston, Lieut. L. F. CARLTON, Tampa.

Georgia

To Fort McHenry, Md., from Camp Crane, Capts. E. G. ADAMS, Greensboro; L. V. McVAY, Salitpa; Lieut. J. A. McGARITY, Augusta.

The following order has been revoked: *To the retired list*, from Fort Riley, Major R. S. WOODSON, Atlanta.

Idaho

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to his proper station*, from Camp Dodge, Lieut. E. W. FOX, Arco.

Illinois

To Camp Sevier, S. C., to examine troops for cardiovascular diseases, from Camp Crane, Lieut. T. S. HUGGARD, Chicago.

To Camp Upton, N. Y., from Camp Crane, Capt. E. W. POTTHOFF, Oak Park.

To Camp Wadsworth, S. C., to examine the command for cardiovascular diseases, from Camp Jackson, Capt. W. H. BUHLIG, Chicago.

To East Potomac Park, D. C., from Army Medical School, Lieut. J. STEVENSON, Chicago.

To Fort Riley, base hospital, from Fort Oglethorpe, Lieut. J. R. BUCHBINDER, Chicago.

To Fort Sheridan, Ill., from Camp Grant, Lieut. M. B. KARATZ, Chicago.

To Markleton, Pa., from New Haven, Lieut. R. G. PESCHMAN, Chicago.

To Richmond, Va., from Camp Crane, Capt. C. A. ALBRECHT, Chicago.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion, *to his proper station*, from Camp Custer, Capt. A. N. CLAGETT, Chicago; from Camp Grant, Capt. J. H. BRYANT, Galesburg; from Camp Sherman, Capt. W. C. SMITH, Chicago.

To Vancouver Barracks, Wash., as tuberculosis examiner, from Denver, Lieut. V. MAURICAU, Rockton.

To Wichita Falls, Texas, Call Field, from San Antonio, Capt. R. H. KUHNS, Chicago.

The following orders have been revoked: *To Camp Sheridan, Ala.*, base hospital, from Fort Oglethorpe, Lieut. W. H. McCANDLESS, Sterling. *To Camp Zachary Taylor, Ky.*, Lieut. H. A. LONG, Effingham.

Indiana

To Fort Snelling, Minn., from Fort Sam Houston, Lieut. M. S. DAVIS, Marion.

To Garden City, N. Y., as tuberculosis examiner, from New Haven, Lieut. C. J. STEVENS, Rockville.

To following order has been revoked: *To Camp Jackson, S. C.*, from Camp Custer, Lieut. H. H. ISAACS, Tangier.

Iowa

To Detroit, Mich., from Camp Crane, Lieut. W. W. MURPHY, Lewis.

To Fort Des Moines, Iowa, from Fort Oglethorpe, Capt. F. R. HOLBROOK, Des Moines.

Kansas

To Camp Zachary Taylor, Ky., base hospital, from Fort Oglethorpe, Capt. C. S. TRIMBLE, Emporia.

To Detroit, Mich., from Fort Riley, Lieut. W. H. POPE, Selden.

To Topeka, Kan., Washburn College, from Kansas City, Mo., Capt. C. E. COBURN, Kansas City.

Kentucky

To Fort Sheridan, Ill., from Fort Oglethorpe, Capt. J. A. O. BRENNAN, J. D. TRAWICK, Louisville.

To Greencastle, Ind., De Pauw University, from Indianapolis, Lieut. A. STEWART, Frankford.

To Newport News, Va., from Fort Oglethorpe, Lieut. T. M. DORSEY, Louisville.

Louisiana

To Camp Zachary Taylor, Ky., base hospital, from Fort Oglethorpe, Lieut. J. S. DUNN, New Orleans.

Maine

The following order has been revoked: *To Cape May, N. J.*, from Camp Dix, Lieut. C. D. GRAY, Portland.

Maryland

To Camp Meade, Md., base hospital, from Fort Oglethorpe, Lieut. E. G. HALL, Baltimore.

To Camp Sevier, S. C., to examine troops for cardiovascular diseases, from Camp Crane, Capt. H. N. SISCO, Baltimore.

To Fort Snelling, Minn., from Camp Crane, Lieut. A. A. PARKER, Pocomoke City.

To Lakewood, N. J., from Garden City, Lieut. J. T. KING, Jr., Baltimore. *For instruction*, from Camp Crane, Lieut. F. C. ELEDER, Baltimore.

Massachusetts

To Camp Sherman, Ohio, base hospital, from Fort Oglethorpe, Capt. G. L. VOGEL, Boston.

To Camp Upton, N. Y., from Camp Crane, Lieut. G. A. WILKINS, Revere.

To Camp Zachary Taylor, Ky., to examine troops for cardiovascular diseases, from Lakewood, Lieut. T. E. BUCKMAN, Boston.

To Detroit, Mich., from Camp Crane, Lieut. N. B. McWILLIAMS, Williamstown.

To Lakewood, N. J., from Camp Crane, Lieut. E. A. ADAMS, Newton.

To Plattsburgh Barracks, N. Y., from Camp Jackson, Lieuts. M. W. PECKIN, Marblehead; D. F. DOWNING, Westborough.

To Richmond, Va., from Camp Crane, Lieut. E. J. GRAINGER, Winthrop.

To Walter Reed General Hospital, D. C., for instruction, from Camp Devens, Capt. A. U. F. CLARK, Westboro.

The following orders have been revoked: *To Camp Dix, N. J.*, from Fort Oglethorpe, Lieut. E. R. GOOKIN, Boston. *To Lakewood, N. J.*, from Camp Devens, Major S. J. MIXTER, Boston.

Michigan

To Camp Custer, Mich., Major L. J. HIRSCHMAN, *Detroit*.

To Camp Sherman, Ohio, from Camp Crane, Lieut. L. J. PINNEY, Detroit; from Camp Perry, Capt. G. J. SCHALLER, Detroit.

To Fort McHenry, Md., from Camp Crane, Lieut. C. E. VREELAND, Detroit.

The following orders have been revoked: *To Camp Abraham Eustis, Va.*, from Fort Oglethorpe, Lieut. H. S. CARR, *Niles*. *To Camp Lee, Va.*, from Fort Oglethorpe, Lieut. J. H. HOUTON, Flint.

Minnesota

To Camp Sherman, Ohio, base hospital, from Fort Oglethorpe, Capt. L. A. NELSON, St. Paul.

To Fort Sheridan, Ill., from Camp Grant, Lieut. W. O. OTT, Rochester.

To Rochester, Minn., Mayo Clinic, from Camp Crane, Major J. C. MASSON, Rochester. For instruction, and *on* completion *to his proper station*, from Camp Grant, Capt. C. I. OLIVER, Graceville.

The following order has been revoked: *To Camp Crane, Pa.*, base hospital, Capt. F. M. MANSON, *Worthington*.

Mississippi

To Fort Thomas, Ky., as *surgeon*, from Camp Shelby, Lieut.-Col. J. T. AYDELOTTE.

Missouri

To Pittsburg, Kan., State Normal School, *from* Kansas City, Mo., Capt. R. B. BREWSTER, Kansas City.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to his proper station*, from Camp Pike, Capt. P. H. SWAHLEN, St. Louis.

To Salina, Kan., Kansas Wesleyan *University*, from Kansas City, Mo., Capt. H. D. CARLEY, St. Louis.

To Wichita, Kan., Fairmont College, from Kansas City, Mo., Lieut. W. G. THOMPSON, Holden.

To Wichita Falls, Texas, Call Field, from San Antonio, Lieut. C. C. COATS, Winston.

Montana

To Rochester, Minn., Mayo Clinic, for instruction and on completion, *to his proper station*, from Camp Grant, Capt. J. G. THOMPSON, Helena.

Nebraska

To Camp Zachary Taylor, Ky., base hospital, from Fort Oglethorpe, Lieut. L. L. NELSON, Norfolk.

To Detroit, Mich., from Camp Gordon, Capt. I. S. CUTTER, Omaha.

To Fort Crook, Neb., from Camp Las Casas, Capt. J. A. STRONG, Kearney.

To Fort Snelling, Minn., from Camp Dodge, Capt. J. P. WILLIAMS, Lincoln.

New Hampshire

To *Dansville, N. Y.*, from Fort Leavenworth, Capt. H. W. CLEASBY, Lancaster.

New Jersey

To Camp Upton, N. Y., as camp surgeon, from Camp Dix, Lieut.-Col. L. R. POUST.

To Richmond, Va., from Camp Lee, Capt. C. MILLS, Morristown.

To *Rochester, Minn.*, Mayo Clinic, for instruction, and on completion *to his proper station*, from Camp Custer, Lieut. J. H. LOWREY, Newark.

To Walter Reed General Hospital, D. C., from Hoboken, Lieut. L. P. BELL.

New Mexico

To Dallas, Texas, from San Antonio, Lieut. H. K. RIDDLE, Reserve.

New York

To Boston, Mass., from Camp Crane, Lieut. F. W. PALMER, Buffalo.

To Camp Abraham Eustis, Va., as orthopedic surgeon, from Camp Sherman, Major A. H. PARSONS, Great Neck. As *tuberculosis* examiner, from Camp Lee, Major F. ARGUS, Buffalo.

To Camp Custer, Mich., from New Haven, Major J. S. BILLINGS, New York.

To Camp Devens, Mass., to examine the command for cardiovascular diseases, from Lakewood, Lieut. L. FRISCHMAN, Yonkers.

To Camp Dix, N. J., from New Haven, Major B. F. KNAUSE, Brooklyn.

To Camp Hancock, Ga., to examine troops for cardiovascular diseases from Lakewood, Lieut. C. E. TUBB, Poughkeepsie.

To Camp McClellan, Ala., to examine troops for cardiovascular diseases, from Lakewood, Lieut. L. L. SHAPIRO, New York.

To Camp Meade, Md., base hospital, from Camp Crane, Capt. H. W. JACKSON, Jr., New York. *To examine troops* for cardiovascular diseases, from Lakewood, Capt. R. G. SNYDER, New York.

To Camp Shelby, Miss., with the board examining troops for cardiovascular diseases, Lieut. L. T. MANN, New York.

To Camp Upton, N. Y., from Garden City, Capt. C. G. O'CONNOR, Brooklyn.

To Camp Wadsworth, S. C., to examine the command for cardiovascular diseases, from Camp Crane, Capt. B. LATTIN, New York.

To Camp Zachary Taylor, Ky., to examine troops for cardiovascular diseases, from Lakewood, Lieut. H. A. COHEN, New York.

To Dansville, N. Y., from Walter Reed General Hospital, Lieut. W. J. A. DONAHUE, Huntington.

To Detroit, Mich., from Camp Crane, Lieut. R. H. OPPENHEIMER, New York.

To Fort McHenry, Md., from Camp Crane, Lieuts. L. J. BUTLER, Albany; P. W. FETZER, New York.

To Fort Snelling, Minn., from Camp Crane, Lieuts. M. L. POLLACK, Staten Island; J. W. W. DIMON, Utica.

To Garden City, N. Y., as tuberculosis examiner, from New Haven, Lieut. G. G. HATZEL, New York.

To Hoboken, N. J., from Camp A. A. Humphreys, Capt. J. C. FISK, New York.

To Lakewood, N. J., from Camp Crane, Lieuts. G. KORNFELD, Brooklyn; J. J. YOUNG, New York. For instruction, from Camp Crane, Lieut. J. W. BURTON, Alpine.

To New York, Bellevue Hospital, as instructor, from Hoboken, Major J. A. HARTWELL, New York.

To Plattsburg Barracks, N. Y., from Camp Devens, Capt. C. R. MARSH, Oneonta; from Camp Jackson, Lieut. P. M. CHAMPLIN, Syracuse.

To Richmond, Va., from Camp Crane, Major H. L. K. SHAW, Albany; from Fort Oglethorpe, Lieut. D. H. MILLS, Oneonta.

To West Baden, Ind., from Fort Oglethorpe, Capt. J. J. O'DWYER, New York.

To White Plains, N. Y., from Camp Jackson, Major R. H. McCONNELL, New York.

The following orders have been revoked: *To Boston, Mass.*, Harvard Graduate School of Medicine, for instruction, from Camp Hancock, Lieut. J. B. L'EPISCOPO, Brooklyn. *To Camp Abraham Eustis, Va.*, from Fort Oglethorpe, Lieut. G. P. MICHEL, Buffalo.

North Carolina

To West Baden, Ind., from Camp Hancock, Lieut. W. MONCURE, Jr., Hamlet.

Ohio

To Camp Crane, Pa., from Hoboken, Lieut. E. B. MALLOY, Akron.

To Camp Dix, N. J., to examine the command for cardiovascular diseases, from Lakewood, Lieut. J. A. GARVIN, Cleveland.

To Camp Sherman, Ohio, base hospital, from Camp Dix, Lieut. A. N. SMITH, Columbus.

To Camp Zachary Taylor, Ky., to examine troops for cardiovascular diseases, from Lakewood, Lieut. E. C. DAVIS, Cleveland.

To Fort McHenry, Md., from Camp Meade, Capt. A. M. STEINFELD, Columbus.

To Fort Riley, Lieut. W. R. CHYNOWETH, Dayton.

To Fort Sheridan, Ill., from Fort Oglethorpe, Capt. R. S. REICH, Cleveland.

To Fort Snelling, Minn., from Camp Crane, Lieut. J. T. KENNEDY, Cincinnati.

To San Antonio, Texas, Brooks Field, from Kelly Field, Lieut. J. M. PUMPHREY, Mount Vernon.

To West Baden, Ind., from Camp Crane, Capt. W. F. LAUTERBACH, Dayton; from Camp Wadsworth, Capt. A. N. WISELEY, Jr., Ada.

The following order has been revoked: *To Camp Crane, Pa.*, base hospital, from Camp Sherman, Lieut. H. SHUBE, Cleveland.

Oklahoma

To Fort Sam Houston, Texas, base hospital, from Camp Bowie, Lieut. W. K. WEST, Oklahoma City.

To West Point, Miss., Payne Field, from Fort Oglethorpe, Capt. D. A. MYERS, Lawton.

Pennsylvania

To Camp Abraham Eustis, Va., as tuberculosis examiner, from Camp Lee, Capt. E. G. WEIBEL, Erie.

To Camp Grant, Ill., as assistant to the camp surgeon, from Fort Benjamin Harrison, Capt. A. H. MOORE, Philadelphia.

To Camp Sevier, S. C., to examine troops for cardiovascular diseases, from Camp Crane, Lieut. E. T. JONES, St. Clair.

To Camp Sherman, Ohio, base hospital, from Fort Oglethorpe, Lieuts. H. R. MATHER, Johnstown; J. M. CONWAY, Pittsburgh.

To Camp Zachary Taylor, Ky., to examine troops for cardiovascular diseases, from Lakewood, Lieut. T. M. MABON, Pittsburgh.

To Detroit, Mich., from Camp Crane, M. B. MAGOFFIN, Pittsburgh.

To Fort Sheridan, Ill., from Fort Oglethorpe, Lieut. F. J. GABLE, Reading.

To Fort Snelling, Minn., from Camp Crane, Lieuts. J. L. ZIMMERMAN, Hershey; D. BEVERIDGE, Washington.

To Garden City, N. Y., as tuberculosis examiner, from New Haven, Lieut. W. C. JOHNSON, Philadelphia.

To Lakewood, N. J., from Camp Crane, Capt. L. M. HARTMAN, Jr., York; Lieut. M. KEMP, Catasauqua. For instruction, Lieut. T. H. BEDROSSIAN, Philadelphia.

To Richmond, Va., from Camp Crane, Lieut. C. A. GUNDY, Lewisburg.

To San Antonio, Texas, Brooks Field, from Kelly Field, Capt. W. S. SHIMER, Philadelphia.

To Walter Reed General Hospital, D. C., from the Surgeon-General's Office, Col. R. H. HARTE, Philadelphia.

Philippine Islands

To Washington, D. C., Surgeon-General's Office, from the Philippine Department, Major C. L. BEAVEN.

Rhode Island

To Camp Abrahm Eustis, Va., from Camp Joseph E. Johnston, Major J. F. HAWKINS, Providence.

Tennessee

To Americus, Ga., Souther Field, from San Antonio, Lieut. E. C. SEALE, Nashville.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to his proper station*, from Camp Pike, Lieut. O. P. WALKER, Memphis.

To West Baden, Ind., from Camp Crane, Lieut. H. K. ALEXANDER, Nashville.

Texas

To Camp Meade, Md., from Camp Colt, Lieut. O. H. TALLEY, El Paso.

To Dallas, Texas, from San Antonio, Lieut. R. M. MILNER, Yoakum.

To Fort Sheridan, Ill., from Camp Grant, Lieut. H. O. JONES, Denison.

To Fort Snelling, Minn., from Fort Sam Houston, Capt. C. F. CLAYTON, Lubbock.

To Richmond, Va., from Fort Oglethorpe, Capt. S. R. MILLIKEN, Dallas.

To Vancouver Barracks, Wash., as tuberculosis examiner, from Denver, *Lieut. C. R.* GOWEN, Carlsbad.

To following order has been revoked: *To Camp Bowie, Texas*, Capt. J. A. KYLE, Houston.

Utah

To Rochester, Minn., Mayo Clinic, for instruction, and on completion *to his proper station*, from Camp Pike, Lieut. G. H. CHRISTY, Vernal.

Vermont

To Camp Wheler, Ga., as orthopedic surgeon, from Boston, Lieut. D. R. BROWN, Lydonville.

To Franklin, Ind., Franklin College, from Indianapolis, Capt. N. J. DELEHANTY, Ruthland.

The following order has been revoked: *To Camp Dix, N. J., from Fort Oglethorpe*, Lieut. D. J. CARROLL, Vergennes.

Virginia

To Americus, Ga., Souther Field, from San Antonio, Capt. B. BARROW, Barrows Store.

To Camp Wadsworth, S. C., base hospital, from Camp Crane, Lieut. E. R. FERGUSON, Roanoke.

To Markleton, Pa., from New Haven, Lieut. N. J. GOULD, *Norfolk.*

To Richmond, Va., from Camp Lee, Lieut. H. D. HOWE, Hampton.

The following order has been revoked: *To Boston, Mass., for* instruction, from Camp Lee, Lieut. R. J. WILKINSON, Richmond.

West Virginia

To Camp Abraham Eustis, Va., as tuberculosis examiner, from Camp Lee, Lieut. F. W. WIEHE, Wheeling.

To Lakewood, N. J., for instruction from Camp Crane, Lieut. C. P. S. FORD, Hansford.

The following order has been revoked: *To Boston, Mass.*, for instruction, from Camp Zachary Taylor, Lieut. J. C. SCHULTZ, Huntington.

Wisconsin

To Camp Beauregard, La., to examine the command for cardiovascular diseases, from Camp Jackson, Capt. A. J. PATEK, Milwaukee.

To Camp Devens, Mass., base hospital, from New Haven, Lieut. F. M. HARRIS, Fond du Lac.

To Camp Sherman, Ohio, from Camp Crane, Lieut. E. A. GATTERDAM, Wauwatosa.

To Fort Sheridan, Ill., from Camp Grant, Lieut. J. A. HERATY, Milwaukee.

To Liberty, Mo., William Jewell College, from Kansas City, Mo., Capt. W. E. GROUND, Superior.

To Vancouver Barracks, Wash., as tuberculosis examiner, from Denver, Lieut. L. F. RUSCHHAUPT, Milwaukee.

To Walter Reed General Hospital, D. C., for instruction, from Fort Leavenworth, Capt. J. C. ELSOM, *Madison.*

ORDERS TO OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Surg. HUGH S. CUMMING, detailed by the President for duty in Europe *to investigate* sanitary conditions at ports from which troops will be returned.

Surg. L. P. H. BAHRENBURG, proceed to Jefferson City and Columbia, Mo., and other necessary *points to* exhibit films in connection with the control of venereal disease.

Surg. HUGH DE VALIN, proceed to Astoria, Oregon, to determine public health value of contemplated improvements.

Passed Asst. Surg. F. A. CARMELIA, *proceed* to Harrisburg, Pa., *for* conference relative to discontinuance of influenza control work in the state of Pennsylvania.

Proceed to Wheeling, W. Va., for *conference relative* to discontinuance of influenza control work in the state of West Virginia.

Passed Asst. Surg. HOWARD F. SMITH, assume charge under Surgeon Frost of epidemiological studies of influenza in the state of Maryland.

Asst. Surg. W. F. WAGENBACH, proceed to Norfolk, Va., for temporary duty.

Asst. Surg. H. S. MUSTARD, proceed to necessary points outside of Philadelphia, Pa., for inspection *work* in connection with the hygiene and sanitation of the Emergency Fleet Corporation.

Prof. E. B. PHELPS, proceed to Milwaukee, Wisconsin to investigate the pollution by industrial waste the water supply of that city.

Acting Asst. Surg. G. M. CONVERSE, detailed *by* the President for duty in Europe under Surgeon Cumming to investigate sanitary conditions at ports from which troops will be returned.

Pharm. F. J. HERTY, proceed to the Marine Hospital, Baltimore, Md., for temporary duty.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest; such as relate to society activities, new hospitals, education, public health, etc.)

DISTRICT OF COLUMBIA

Personal.—Dr. L. M. Hynson is absent from the city on a belated vacation.——Lieut.-Col. E. G. Seibert was home recently on furlough from Mineola, L. I.

New Superintendent for Garfield Hospital.—Dr. A. W. Smith, for the past year or two superintendent of Garfield Memorial Hospital, will be succeeded the first of the year by Dr. Carl S. Keyser of this city.

Address on War Surgery.—Col. Bailey K. Ashford, M. C., U. S. Army, now attached to the general staff, recently addressed the Medical Society of the District of Columbia on the "Histopathology and Treatment of War Wounds." As Colonel Ashford's duties in France took him to all parts of the front and required his study of methods in vogue at all surgical centers his address was of intense interest and seemed to bring the very atmosphere of the war operating room across the sea to his auditors.

Medical Society Election.—The following officers for 1919 were elected by the Medical Society of the District of Columbia at a meeting held December 4: president, Dr. William Gerry Morgan; first vice president, Dr. Ada R. Thomas; second vice president, Dr. A. R. Shands; recording secretary, Dr. H. C. Macatee; corresponding secretary, Dr. J. Russell Verbrycke, Jr.; treasurer, Dr. C. W. Franzoni. The following were elected members of the executive committee for a term of three years: Drs. A. W. Boswell, Philip S. Roy and Charles S. White. Dr. Morgan in a speech of acceptance of the presidency not only expressed his appreciation of the honor involved, but announced his intention of using every endeavor to carry to completion the erection of a home for the medical society. This is a project begun under the presidency of Dr. E. Y. Davidson about two years ago; in spite of the deterrent effect of the war, steady progress has been made in paying for a building site, and there is every reason to believe that the year 1920 will see the society in possession of a home of its own. A very interesting and pleasing incident of the same meeting was the reelection of Dr. C. W. Franzoni as treasurer for his forty-fifth term; the society instructed the secretary to cast the unanimous ballot of the society for Dr. Franzoni and adopted the resolution by a rising vote.

ILLINOIS

Chicago

Personal.—Dr. Edward F. Garraghan has been appointed attending laryngologist at Cook County Hospital, to succeed Dr. Joseph C. Beck, who is at present commandant of the Czecho-Slovak Hospital in Cognac, France.

Tuberculosis Institute Luncheon.—The Chicago Tuberculosis Institute gave a luncheon at the Hotel LaSalle, December 11, at which Dr. Robert H. Babcock, Chicago, presided, and Dr. Donald B. Armstrong, Framingham, Mass., gave an account of the Framingham Community Health and Tuberculosis Demonstration.

Illegal Practitioner Fined.—Dr. Bertha C. Day Raymond of 2675 East Seventy-Fourth Street was arrested by the Department of Registration and Education of the State of Illinois, December 3, on the charge of practicing medicine without a license. She pleaded guilty in the municipal court of Chicago and was fined $25 and costs.

Work Against Drug Traffic.—Indictment of seven alleged dealers in opium and morphin were returned by the federal grand jury, December 6. The indictments were secured by Assistant United States Attorney Epstein, under the Harrison Drug Act, which provides a penalty of five years imprisonment or $2,000 fine. The men indicated are as follows:

Wesley S. Johnson, New York, arrested with 30 ounces of morphin sulphate in his possession.

Thomas Cross, known as "Safety Deposit Tom," because he kept his drugs in various banks; recently served two years in Leavenworth, and now arrested as Johnson's chief aid.

Charles Brown, 644 Narth La Salle Street; an old offender peddling drugs in the north side resorts.

Albert Trilling, nicknamed "Ciggie," concealing drug.

Louis Christian, alias "Whitey," smuggler of drug into the Bridewell through aid of women.

Clarence Safford, also a notorious peddler.

Samuel Shields, an exconvict and drug peddler.

The indicted men are said to have had the city divided into districts for the sale of morphin to drug addicts.

LOUISIANA

State Board to Have Its Own Building.—The state board of health has purchased the property at 422 Chortes Street, opposite the New Orleans Court House, to be used as an annex to the board offices. The building will be romedeled and a laboratory is to be constructed on the roof.

Demobilization Resolutions.—At the meeting of the Orleans Parish Medical Society, November 25, resolutions were adopted petitioning the secretaries of the Army and Navy to consider the shortage of medical men on account of the war needs prior to the signing of the armistice, and the presence and recrudescence of influenza, with the object of demobilizing as expeditiously as may be consistent with the efficiency of the service, as many as possible of the medical officers in camps in this country and abroad.

MARYLAND

Released from Hun Camp.—After being interned in a prison camp at Rastatt, Germany, for nearly six months, Capt. Charles W. Maxon, Baltimore, has been released and has reached the American lines. He states that he was well treated, but said that the Germans were greatly in need of physicians, which condition prolonged his confinement.

Slight Increase in Influenza.—The report of fifty-three new cases of influenza during a period of twenty-four hours showing an increase of twenty-nine compared with the record for the previous twenty-four hours, led Health Commissioner Blake to sound a general note of warning. He states that the situation is not alarming and that all of the cases are mild ones, but warns the public to avoid going recklessly into crowded places as this causes the disease to spread.

Many Wounded Soldiers Arrive at Fort McHenry.—A contingent of 256 soldiers arrived at General Hospital No. 2, Fort McHenry, from overseas, via Newport News. An extra force was added to the receiving ward to tally the records and names of the men. Last week 150 or more men arrived at the hospital from overseas and this week two shipments were received, one of which consisted of 146 men from Newport News, and a contingent of 140 wounded from Hoboken. A majority of these are orthopedic cases and represent a more serious type of wound than the military physicians have been receiving. It is expected that patients will arrive until the hospital is filled to its capacity which comfortably accommodates approximately 1,400 men.

MASSACHUSETTS

Hospital in Nantucket.—The Underwood Memorial Hospital, Nantucket, erected by H. O. Underwood, Belmont, in memory of his wife, has been completed at a cost of $50,000 and given to the town of Nantucket.

Personal.—Fred W. Archer, Boston, has been appointed a member of the State Board of Registration and Pharmacy, to succeed William S. Beyary, Melrose.——Dr. Roscoe D. Perley, Melrose, and Dr. Frank S. Bulkeley, Ayer, have been appointed medical examiners (coroners) for Middlesex County.——Dr. John B. Beebe, Great Barrington, has been appointed medical examiner (coroner) and Dr. Clifford S. Chapin, Great Barrington, assistant medical examiner (coroner) for Berkshire County.——Dr. Joseph C. E. Tasse, Worcester, who has been seriously ill at his home for five weeks, is reported to be improving.

MONTANA

Personal.—Dr. Paul A. Remington, for six years assistant surgeon at the Northern Pacific Beneficial Association Hospital, Missoula, has been appointed chief surgeon of the Northern Pacific Hospital, Tacoma, Wash., the largest maintained by that association, and took charge, September 10, succeeding Dr. Saxe W. Mowers.

Hospital Items.—The new hospital erected by the State University of Montana, at Missoula, at a cost of $7,000, for the use of the S. A. T. C., with accommodation for fifty patients, is now completed. The building is 128 feet wide, and 20 feet in depth, and has four wards, and an isolation ward, beside the necessary offices and service rooms.——The Isolation Hospital, Anaconda, recently completed at a cost of

$11,000, was opened to receive visitors, November 23. The building is in the form of a maltese cross, the administration room being in the center, the arms of the cross forming four isolated wards, each containing accommodation for six patients.

NEW YORK

Weiss Found Not Disloyal.—Dr. George C. Weiss, Mount Vernon, formerly health commissioner of that city, was placed on trial, November 25, for a second time, charged with violation of the espionage law, and was found not guilty. In the first trial the jury disagreed.

Personal.—Dr. Mary T. Greene, Castile, has been appointed a member of the Board of Child Welfare, for Wyoming County, to succeed Dr. Henry E. Pierce, deceased.——Dr. William G. Bissell, Buffalo, on November 21, was elected president of the state board of medical examiners.——By unanimous vote of the city council of Niagara Falls, the bill of Health Officer Scott for $603 due him as registrar of vital statistics was ordered paid.

Hospital Directors Elected.—At the annual meeting of the directors of the Elizabeth A. Horton Memorial Hospital held in Middletown, N. Y., November 25, Dr. Theodore D. Mills, Middletown, was elected president of the corporation which will have charge of carrying out the terms of Eugene Horton's will, regarding the erection of a hospital in memory of his mother and for which he provided a fund of $600,000. Dr. Daniel B. Hardenbergh, Middletown, was also elected a director of the corporation. A committee was also elected to select a site for the institution.

New York City

County Society Election.—At the annual meeting of the Medical Society of the County of New York, held November 25, the following officers were elected; president, Dr. Charles Howard Peck; vice presidents, Drs. Charles H. Chetwood and George Gray Ward, Jr.; secretary, Samuel S. Dougherty; assistant secretary, Dr. J. Milton Mabbott, and treasurer, James Peterson.

Resolutions Regarding Major Bissell.—The executive committee of the Medical Board of Bellevue Hospital, at a meeting held December 3, adopted a resolution setting forth its profound sorrow and regret at the death of Major Joseph Biddleman Bissell, M. C., U. S. Army, chief of the surgical service at Fort McHenry, Md., and visiting surgeon and surgical director of the fourth division of Bellevue Hospital.

Academy of Medicine Elects.—At its anniversary meeting, December 5, the New York Academy of Medicine elected the following officers: president, Dr. George David Stewart; vice presidents, Drs. Reginald H. Sayre and Charles H. Peck; recording secretary, Dr. Royal S. Haynes, and trustee, Dr. Walter B. James. Lieut.-Col. Raffaele Bastianelli, professor of surgery of the University of Rome, was elected to honorable fellowship in the academy.

Injunction Asked.—A permanent injunction has been asked by the head of the Flatbush Chamber of Commerce, restraining the city officials from reopening the Barren Island garbage plant. The argument was supported by an affidavit from the president of the board of trustees from Bellevue and Allied Hospitals, after having discovered the effect that the noxious odors from the garbage plant have had on the patients in the Hospital for Crippled Children, which is located on Rockaway Peninsula.

Life Insurance Presidents Meet.—The Association of Life Insurance Presidents which met at the Hotel Astor, last week, listened to a paper by Major-Gen. William C. Gorgas, read by William D. Wrightson, in which were pointed out the lessons in sanitation that the soldiers of the United States have gained in their camp life. He expresses the conviction that when these men return home they will be desirous of applying these same measures to their home communities in so far as such application is possible. In his opinion the greatest sanitary lesson of the war is the effect of crowding in large units. He suggests that both overcrowding and segregation might be avoided by constructing the cantonments of huts 20 feet by 20 feet in plan containing not more than six men. He believes that the death rate from disease in our Army in this war will be far less than the best death rate that has gone before us—it will probably be somewhere near 9 per thousand up to October 1. After that date there will be an increase over this figure owing to the appearance of influenza in the camps. Another paper presented by Dr. Frederick L. Hoffman on compulsory health insurance showed that this measure had proved a complete failure as a function of the state in Germany.

NORTH DAKOTA

Personal.—Dr. Oliver E. Distad, Williston, who started for China in October and was taken ill with pneumonia at Seattle, sailed for China, November 22.——Dr. A. G. Long, recently appointed acting director of the public health laboratory at the University of North Dakota, Grand Forks, has assumed his new duties. He succeeds Dr. John W. Cox, University, resigned.——Dr. Joseph T. Newlove has been appointed health officer of Minot, to succeed vice Dr. Harry G. Knapp whose term has expired.

OHIO

Protest Against Reduction.—Dr. Walter E. List, superintendent of the Cincinnati General Hospital, has made a protest to Financial Director Holmes against the reduction of $22,000 in the appropriation for the hospital for 1919, as compared with the amount appropriated for 1918.

Physicians' Offices Closed.—The Mayor of Warren, November 25, issued a proclamation ordering the closure of all physicians' offices during the prevalence of influenza. For the time being, excepting emergency cases, persons who desire to consult physicians can see them only by appointment.

Fund Allotted for Health Board.—The United States Public Health Service announced, November 20, that the sum of $51,832.61 had been allotted by the federal government to the state of Ohio, for the use of the department of health in that state, for the prevention, control and treatment of diseases.

To Improve Rural Health Protection.—The legislature will consider plans for reforming the administrative health machinery in small local districts, as the rural districts and small towns of the state are not giving adequate health protection under the existing laws. It is proposed to group the health districts of the state into larger units, and thereby to provide means of employing a sufficient number of competent health workers.

Personal.—Dr. Earl A. Martin, superintendent of the Cincinnati Tuberculosis Sanatorium, resigned, November 30, resignation to take effect as soon as a successor is appointed. Dr. Martin expects to enter the mission field as a medical missionary.——Dr. Oscar H. Sellenings, Columbus, who has been engaged in child welfare work in France under the auspices of the American Red Cross, with headquarters at Marseilles, has returned to the United States.——Dr. Charles B. Finefrock, Port Clinton, has been appointed coroner of Ottawa County, to succeed Dr. Mason J. Skiff, Oakharbor, who has resigned.——Dr. Martin F. Vereker has been elected health officer of Hamilton.

Deprecate Child Labor.—The state department of health and state council of national defense have united in a drive to keep children out of industrial occupation and in school. The officials dwell on the responsibility of communities to provide scholarships or other aid for children financially unable to continue in schools, and on the necessity of teachers making schools attractive to the children. During the war the growing tendency toward the employment of child labor was noted and while the government refused to sanction the employment of children in war work, nonessential industries were beginning to look on children as the reservoir of cheap labor. The war time labor situation had not demanded the employment of children, and with the close of the war the employment of children becomes still more inexcusable.

PENNSYLVANIA

Gift of Scholarship.—The Pennsylvania Training School for Feebleminded Children eventually will receive $5,000 for the maintenance of a scholarship from the estate of the late Benjamin H. Smith.

Venereal Dispensary Opens.—The Department of Health of the Commonwealth of Pennsylvania announces the opening of a genito-urinary dispensary in Shenandoah, under the charge of Dr. Christian Gruhler. The dispensary is open on Tuesdays and Fridays from 8 to 10 p. m.

Personal.—Dr. William H. Emery, Coatesville, while driving from his home toward Downington, November 29, lost control of his car and crashed into a telegraph pole. The machine was demolished and Dr. Emery was taken to the Chester County Hospital suffering from concussion of the brain and serious cuts and bruises.——Dr. Henry J. Bell, Pittsburgh, was attacked by robbers, November 26, and beaten and robbed.

Philadelphia

Receive New Professors.—The Medical Club of Philadelphia gave a reception at the Bellevue-Stratford Hotel, December 13, in honor of Dr. Jay F. Schamberg and Lieut.-Col. J. Torrance Rugh, M. C., U. S. Army, newly elected professors in Jefferson Medical College.

Staff Election.—The staff physicians of St. Mary's Hospital at their meeting, November 23, elected the following officers: Dr. Joseph H. Ross, president; Dr. Louis F. Love, vice president; Drs. William P. Grady and George C. Kieffer, secretaries, and Dr. Ellwood R. Kirby, medical director.

Personal.—Dr. Collin Foulkrod has been elected to fill the vacancy on the staff of the Maternity Hospital caused by the death of Clarence H. Gray.——Major Jackson Stewart Lawrence, M. R. C., attached to the 368th Infantry, colored regiment, was given the distinguished service cross, the highest field honor for bravery, by General Pershing, for saving the life of a negro soldier without regard for his own safety.——Capt. Thomas C. Ross, in command of Ambulance Company No. 110, 103d Sanitary Train, was wounded early in September while giving aid to the wounded under fire.——Dr. William T. Shoemaker, who went to France with Base Hospital No. 10 from the Pennsylvania Hospital, has been made consulting ophthalmologist to all American hospitals in England. Dr. Shoemaker's appointment carries the rank of lieutenant-colonel.

Reconstruction Conference.—A conference under the auspices of the Division of Hygiene and Engineering of the Department of Labor and Industry was held at the Bellevue-Stratford Hotel, December 6. Representatives of the National Association of Industrial Physicians and Surgeons, from all sections of the country, are holding their seventh annual conference in conjunction with the labor and industry meeting. Dr. Francis D. Patterson, Harrisburg, chief of the Department of Hygiene and Engineering of the Department of Labor and Industry, presided. Problems of physical reconstruction and industrial rehabilitation of war and industrial cripples were considered. Major R. Tait McKenzie, formerly of the British army, now director of physical education at Pennsylvania University, read a paper on "Mechanical Aids to Reclamation"; Dr. Alfred Stengel read a paper on "The Reclamation of the Diseased," and T. B. Kidner, vocational secretary of the Invalided Soldiers' Commission of Canada, read a paper on "Vocational Training for the Handicapped."

WASHINGTON

Personal.—Dr. Jerry E. Vanderpool, health officer of Walla Walla and Walla Walla County, resigned, November 30, his resignation to be effective as soon as a successor can be named.

WISCONSIN

Smallpox in Oshkosh.—It is announced that eleven cases of smallpox have been discovered at Oshkosh, seven of which were at first diagnosed as influenza. The seven houses in which these cases were found have been placed under strict quarantine.

College Raised Its Million.—The Marquette University of Milwaukee has succeeded in raising its medical school endowment fund of $1,000,000, one-third of which was donated by the Carnegie Foundation for the Advancement of Teaching. The income from this fund is to go for the salaries of teachers and maintenance and cannot be used for buildings, additional funds for which are now being sought.

Antituberculosis Society Meeting.—The annual meeting of the Wisconsin Anti-Tuberculosis Association was held in Milwaukee, December 13 and 14. The essential subject of discussion at this meeting was the establishing of free and pay tuberculosis clinics in every suitable county in the state. A public health program for the ensuing year was also presented which gave particular emphasis to tuberculosis. The changed conditions, and in particular the uncovering of a large number of cases of incipient tuberculosis in discharged soldiers and draft rejects, have convinced the association that the next link to be formed in the chain of defense against tuberculosis is the dispensary.

CANADA

Plans New Medical Building.—The Faculty of Medicine of Western University, London, Ont., is planning the erection of a new medical college building at an estimated cost of $100,000.

Personal.—Major Thomas D. Archibald has been transferred from the command of the Whitby (Ont.) Military Hospital to the new St. Andrews Military Hospital, Toronto.——Capt. Fred G. Bantling, M.B., Alliston, Ont., is reported to have been wounded.——Dr. Walter S. Downham, who has been acting medical officer of health, London, Ont., since the resignation of Dr. Hibbert W. Hill, has been recommended by the board of control for permanent medical officer of health.

Hospital News.—New regulations have been adopted by the board of governors of the Kingston (Ont.) General Hospital for the reorganization and extension of the visiting staff. The idea is to to make the institution a teaching hospital in connection with Queen's University Medical Department.——The Canadian Hospital ship *Araguya* has begun its tenth voyage to Canada. It is in command of Col. D. A. Whitton, Ottawa.——The Board of Control, Toronto, has recommended a grant of $16,000 for the Hospital for the Incurables.——The new Orthopedic Military Hospital in Toronto will be opened early in 1919, and it is proposed to use it for teaching purposes as well as being the central orthopedic hospital for soldiers in Canada. It is to have accommodation for from 1,500 to 2,000 patients.——The Toronto Free Hospital for Consumptives is seeking a grant of the Toronto Board of Control of $31,000 to clear off the deficit engendered during the last hospital year.——The reception hospital in Toronto has been inspected and reported on by the medical officer of health, Dr. Charles J. C. O. Hastings. He finds that the building is old and dilapidated, and totally unfit for purposes for which it is used. Here have been watched incipient cases of insanity, and it looks as though the city will have to provide better accommodation.

Ontario Medical Practice Act.—The government called the various cults and the representatives of the medical fraternity in Ontario last week for the purpose of discussing the report of the commissioner, Mr. Justice Hodgins. The medical profession was satisfied with the report in general, but proposed, or suggested, the following definition of the practice of medicine: "The practice of medicine shall mean and include the diagnosis, healing, alleviation or attempt to diagnose, treat or relieve any ailment by advice, assistance or any means with or without the use of drugs or mechanical means." The osteopaths thought they should be given a department in the universities of the province, and the power to appoint the instructors in anatomy and physiology. The minister of education asked what a speaker for that body meant when he referred to osteopathic anatomy and scientific anatomy; what was the difference? The reply was that osteopathic anatomy was the scientific anatomy. Col. Alexander Primrose, C.M.G., Toronto, president of the Academy of Medicine, told of his observations in England and France where neither the British nor Canadian forces allowed any one but a qualified surgeon or physician in the C. A. M. C. and the R. A. M. C., as they had specially trained physicians and surgeons for all branches of manipulative surgery. He advised the government to inquire into his statement.

GENERAL

Gorgas in New Activities.—Major-Gen. William C. Gorgas, M. C., U. S. Army, retired, who recently returned from France, will undertake work as director of war field work for the Rockefeller Foundation and will soon sail for Central and South America.

American Association for the Advancement of Science.—The seventy-first meeting of the American Association for the Advancement of Science will he held in Baltimore, Dec. 23 to 28, 1918. The opening general session will be held in McCoy Hall, 311 West Monument Street, December 26, when Dr. Goodnow, president of Johns Hopkins University, will deliver an address of welcome, and Dr. Theodore Richards of Harvard will speak on the conservation of the world's resources. Regular meetings of the sections will be held from Thursday morning, December 26, to Saturday, December 28.

Division of Industrial Hygiene and Medicine.—Physicians, sanitarians and nurses who are desirous of establishing industrial connections may now register for this purpose with the Division of Industrial Hygiene and Medicine. This division, with personnel detailed by the United States Public Health Service, is acting for the Working Conditions Service of the Department of Labor in the investigation and supervision of the health of industrial workers. In connection with these activities the division proposes to carry on a service whereby employers who wish to obtain medical personnel for their establishments may be put in touch with available physicians, sanitarians and nurses. To facilitate this service a register will be kept by the division, and physicians, sanitarians and nurses desiring to become affiliated with industrial establishments are asked to communicate with the Division of Industrial Hygiene and Medicine, 202 Ouray Building, 805 G Street, Northwest, Washington, D. C., mentioning qualifications, type of industrial connection preferred and salary expected.

Poliomyelitis Report.—The Public Health Service has recently published a report of epidemiologic studies of poliomyelitis occurring in 1916 in New York City and northeastern United States, with intensive studies of the disease in certain cities and counties in New Jersey, Connecticut and Rhode Island. Present knowledge in regard to the epidemiology of poliomyelitis is summarized. The publication is *Public Health Bulletin 91*, by Drs. Claude H. Lavinder, Staten Island, N. Y.; Allen W. Freeman, Columbus, Ohio, and Wade H. Frost, Washington, D. C. Another bulletin of interest from the Public Health Service is *Public Health Bulletin 95*, by Dr. Joseph G. Wilson, New York City, on infectious diseases in children, the study covering about 6,000 cases among immigrant children. The main conclusion reached as the result of this study is that it is practicable to treat contagious and noncontagious diseases in the same hospital and with the same nursing force, and even in the same wards provided the wards are cut up into small cubicles and the proper nursing technic is enforced. There is practically no danger of cross infection.

Influenza.—While a number of communities throughout the United States report the subsidence of influenza and the removal of restrictions, since the last week in November there has been a notable recurrence of the outbreak in a good many states. In many instances it has been found desirable to return to the restrictions with reference to public gatherings, schools, churches, amusements, etc., and in a number of places masks are required in public places. In most instances, it is believed, the disease is not so severe in its nature and the death rate is lower than in the first intense wave of the epidemic, and with the education gained by the public in the former wave less trouble is experienced in handling the disease. Indiana is one of the states which seems to be hit hardest by the recrudescence. Ohio also reports many new cases throughout the state, but with a percentage of fatalities running only about one half that of the earlier outbreak. It is the hope of the authorities in that state that by precautionary measures among the 40 per cent. of the people susceptible to the disease it may be strung out over as long a period as possible, thus causing less disruption of the ordinary routine of business and life in general. Wisconsin, Kansas, Michigan, New York state and Illinois, particularly Chicago, report general increases in the number of cases. *Public Health Reports*, November 29, continues the publication of state summaries of the disease. It is probable that a number of cases of influenza above the normal endemic figures will continue throughout the winter, with a considerable number of pneumonia cases, the regular season for which is just beginning. At the meeting of the American Public Health Association in Chicago during the present week influenza was one of the important topics of discussion.

FOREIGN

Malaria Control on the Island of Cyprus.—On the island of Cyprus an antimalaria campaign has been in progress since 1913. In the annual medical report for the island for 1917 it is said that the number of persons with malaria treated was reduced from 10,035 in 1912 to 2,709 in 1917, and the percentage of large spleens in schoolchildren was reduced from 17.2 in 1913 to 6 in 1917. The work has consisted in cleaning and improving drains and streams, making new drains, filling in, screening or covering wells, stocking wells with fish, filling in or draining pools, cutting and removing grass, etc. Drugs were used to some extent.

CORRECTION

Influenza at Rome.—The Journal of August 17, in describing the measures taken against influenza in Europe, mentioned the closing of the schools and moving picture shows at Rome. The *Policlinico* commented later on this, that "contrary to the usual accuracy of The Journal, this news item was without foundation," adding, "And this is the way history gets written." The news item was taken from a foreign journal, but it seems that last summer the epidemic was too mild at Rome for such strenuous measures. The November numbers of our Italian exchanges, however, relate that these very measures were being enforced at Rome at date of writing. History got itself written too previously, it seems, but the facts finally managed to catch up with it.

BUENOS AIRES LETTER

Buenos Aires, Oct. 26, 1918.

Epidemic of Influenza

The steamships *Demerara* and the *Infanta Isabel* arrived at Buenos Aires with numerous cases of influenza on board, and there had been several deaths during the voyage. The public health authorities allowed the passengers to disembark without taking any prophylactic measures whatever. Fifteen days later numerous cases of influenza developed in the city, especially in the mail service, in which there were over 100 cases in one day. By another week the infection had spread throughout the entire city thence to numerous points in the interior of the country. It is estimated that there have been 250,000 cases in Buenos Aires alone. Fortunately the disease has been of a mild type, no deaths occurring except nine fatal cases in the Hospital Muñiz. Quite recently the mortality has increased a little, but it is still low. The symptoms are generally headache, pains in the muscles, sore throat, high fever and prostration. In the majority of the cases improvement is evident by the second to the fifth day, but pronounced depression and anorexia are left. The graver cases developed pulmonary or gastro-intestinal symptoms. Almost all the fatalities were from pneumonia or bronchopneumonia. The Pfeiffer bacillus was encountered in most of the cases examined. In the pneumonia cases, it was associated with the pneumococcus.

The indecision of the public health authorities has been the object of much criticism. The Departamento Nacional de Higiene has been without a head for several months.

Infantile Mortality

Under the auspices of the Sociedad Argentina de Pediatria three special meetings have been held to discuss problems relating to infantile morbidity and mortality in Argentina. In the last few years they have presented a certain increase. The mortality of children less than a year old represents 21 per cent. of the total mortality. The figure in reality is low in the capital and on the coast, but it is considerable in the provinces of the interior. It was decided to appoint a special committee to advise the most important measures to be taken.

The University Elections

The curious reform in the statutes of the universities, which has recently received official sanction, accords to the students the right to vote for the election of the dean and of the members of the Consejo Directivo de las Facultades, the voting delegates from the students to equal in numbers the number of the regular professors of the various faculties. These new conditions have led to an extraordinary electoral agitation. The students have made out lists of candidates whom they expect to elect. They are solidly backing all persons known to be opposed to the present university authorities, and those who for any reason they think have been victims of injustice. Sensible persons are hoping that this reform will not last long.

LONDON LETTER

London, Nov. 19, 1918.

The Influenza Epidemic

Though fresh cases of influenza continue to occur, the epidemic has spent its force and the number of patients under treatment has greatly diminished. The complication of pneumonia is less often fatal than it was at first. The Royal College of Physicians has drawn up a memorandum for the information of the public. It is pointed out that the present epidemic is virtually world-wide, irrespective of race, community or calling. Similar world-wide epidemics occurred in 1803, 1833, 1837, 1847 and 1890. The long intermission since the last widespread epidemic had made an early reappearance probable, but the conditions of epidemic prevalence of influenza are too obscure to allow of precise prediction. This outbreak is essentially identical, both in itself and in its complications, including pneumonia, with that of 1890. The disproportionate occurrence of a special symptom, a well-recognized phenomenon in the case of epidemics, for example, nosebleed in the present epidemic, does not invalidate this statement. The nature of the virus is still uncertain. It is possibly beyond the present range of microscopic vision. The bacillus discovered by Pfeiffer has in the past been regarded as the probable cause, though on insufficient evidence. There is no doubt as to the primary part it plays in the disease, important though it probably is as a secondary infecting agent. Pfeiffer's bacillus, the pneumococcus, and, above all, in this epidemic the streptococcus, seem to be responsible for most of the fatal complications of influenza. Infection is conveyed from the sick to the healthy by the secretions of the respiratory surfaces. In coughing, sneezing, and even in loud talking, these are transmitted through the air for considerable distances in the form of a fine spray. The channels of reception are normally the nose and throat; hence the importance of avoiding thronging of every sort. The period of incubation is about forty-eight hours, or even somewhat less. Good nourishing food, and enough of it, is desirable. War rations are fully adequate to the maintenance of good health, though they may not afford just the particular articles that each fancy demands. Alcoholic excess invites disaster; within the limits of moderation each person will be wise to maintain unaltered whatever habit experience has proved to be most agreeable to his own health. As the primary cause of influenza is unknown, no form of inoculation can be guaranteed to protect against the disease. Moreover, the lack of enduring protection after an attack shows that a vaccine could not protect for more than a short period. No drug has as yet been proved to have any specific influence as a protective.

Medical Demobilization

The Central Medical War Committee has recommended that medical officers who have served away from the area of their practices since the beginning of the war should be released before others serving temporarily with the forces. The Ministry of National Service has advised that this principle be adopted, and the Army Medical Department has agreed that officers who have served since the beginning of the war shall be released first from the army, while those who have qualified since the war began shall be withdrawn last.

Barbarities Committed by German Physicians

In the House of Commons, Sir George Cave, the home secretary, who recently went on a mission to Germany to arrange for the exchange of British for German prisoners, referred to the cruelties perpetrated on British prisoners in the camps and salt mines and those employed behind the lines to dig trenches and set up wire. He also said: "There are others, even in the hospitals, where, surely, humanity ought to reign. No doubt there are many humane physicians in Germany, but there are others who make a cruel distinction between British prisoners and other prisoners of war; and even among nurses many are found, who, far from helping suffering prisoners, have stooped to inflict insult and injury on them. The hospitals, as is shown by the condition of our men who are arriving in Holland and Switzerland, are in a very bad state, and our wounded do not get proper treatment." As previous letters to The Journal have shown, this conduct of the German medical profession is far from exceptional. In a letter to the *Times*, Mrs. Vincent Smith gives a harrowing account of the treatment of her aged father, Colonel Baddeley, British consul at Bruges, who after enduring all sorts of persecution in his house was taken to Germany. When he arrived at Aix-la-Chapelle his condition so aroused the pity of the Red Cross women that one brought him some soup, but a physician nearly knocked the cup out of her hand and asked her what she meant by having pity on an Englishman, and ordered the sentries to take him away. The same physician later came on the station platform and collected a crowd and cursed the old gentleman and his daughter in English. When they arrived at the camp at Giessen there was one physician who was " a good sort," but another, a professor, a perfect brute. He told the Red Cross men they were never to speak to Mrs. Smith or to do anything for her or to give her medicine.

Penalty for Soldiers Refusing to Submit to Treatment

In the naval and military war pensions bill, which is now passing through the House of Commons, there is the following clause: If any disabled officer or man, on being so required in the prescribed manner, refuses or without reasonable cause fails to submit himself for medical examination, or if any disabled officer or man, as respects whom it has been certified that treatment in an institution or otherwise is necessary in his interest, refuses or without reasonable excuse fails to undergo such treatment in accordance with such directions as may be given in that behalf by or with the approval of the minister, the minister may, if he thinks fit, order that any pension or allowance to which that officer or man would otherwise be entitled shall cease to be payable either in whole or in part for such period as may be specified in the order. Mr. Hodge, minister of pensions, said that there was power to punish a man to the extent of withholding half his pension if he refused treatment; but if a man's pension was taken away, the punishment, if he was a married man, fell on his wife and child. He hoped that the power asked for under the bill would of itself be sufficient to induce men to accept treatment.

Rations for Tuberculous Persons

A new dietary scale for the tuberculous has been issued by the government. The following are the maximal weekly amounts for each male over 10 years of age residing in a sanatorium or special ward set apart for the treatment of tuberculosis: meat (including suet) 56 ounces; fish and poultry, 16 ounces; bacon, 8 ounces; bread, 64 ounces; flour, 8 ounces; sugar, 8 ounces; butter and margarin, 10 ounces; lard and edible fats, 3 ounces; potatoes, 80 ounces; vegetables (fresh), 28 ounces; milk, 14 pints; jam, syrup, etc., 8 ounces; cereals, 12 ounces; oatmeal, 8 ounces; peas, beans and lentils, 8 ounces; tea, 2 ounces, and cheese, 4 ounces. Since patients suffering from marked constitutional disturbance may be unable to take peas, beans and lentils or the full amounts of potatoes and bread specified, an adult male patient certified by the medical officer of the institution to be so suffering and to require additional milk shall be entitled to not more than 7 pints of milk weekly (or the equivalent in dried milk prepared from whole or separated milk) in addition to the amount specified. Females over 10 years of age and children under 10 are entitled to four fifths and three-fifths, respectively, of the amounts laid down for males over 10, except that in every case the patient will be entitled to 8 ounces of sugar and 3 ounces of edible fats weekly.

Prostituted Science

In his presidential address to the Faraday Society, Sir Robert Hadfield said that the war had been largely one of the metallurgist, the engineer and the chemist. To the enemy scientists had been left the ignoble rôle of prostituting knowledge to the basest of uses. No matter how clever had been their inhuman ideas with regard to poison gas, petrol flame throwers, etc., the enemy's men of science in time to come would look back and find everything to be ashamed of and nothing of which they could be proud. On the other hand, the scientific men of all the Allies had not only clean hands but also clean minds. While it had been necessary for us in self defense to meet and counterattack the many horrible devices of the enemy, there was not a man in the whole of the British Empire who would have introduced one of these terrible devices. Huns of all classes were equally to blame for this war. Of what use, therefore, was it to talk about a league of nations at this hour of the day? It would be a league of fools if it included Germany after her unparalleled atrocities, inhumanity and bestiality. To admit the Hun to any council of nations would be like inviting a burglar or a murderer to join a Y. M. C. A. council.

PARIS LETTER

Paris, Nov. 14, 1918.

Prophylaxis and Treatment of Complications of Influenza

At a recent meeting of the Académie de médecine, Dr. Louis Weiller recommended the use of dilute solutions of beechwood creosote in the prophylaxis and treatment of the pulmonary complications of influenza. Every twelve hours the patient is given in an enema a glass of lukewarm milk containing about 1 drop of creosote for each year of age for children, and 25 to 30 drops for adults. The mixture should be well shaken and the enema retained for at least two hours. In cases of pulmonary complication, the dose should be increased by 2 to 5 drops for children and 4 to 8 drops for adults. The complication subsides rapidly. The intervals should be lengthened when the temperature becomes normal, and two days after the cessation of the pyrexia, the treatment is stopped. Albuminuria, so frequent a symptom in pneumococcic infections, is not a contraindication for this treatment. As adjuvant medication, acetate of ammonia may be given by mouth, and antisepsis of the nasopharynx should not be overlooked.

The Influenza Epidemic

The epidemic of influenza is on the wane in Paris. For the week ending November 2, 1,119 deaths from influenza were registered as against 1,263 for the preceding week. Adding to these figures the deaths caused by acute diseases of the respiratory apparatus, the result is 1,539 deaths as against 1,778 for the preceding week. M. Mesureur, directeur de l'Assistance publique, reports that the hospital admissions have fallen off about 50 per cent., and the wards are no longer crowded with patients.

Dr. Louis Mourier, undersecretary of state for the Service de Santé militaire, reported to the Commission d'hygiène that in the army the epidemic is subsiding, and that most of the cases of today do not present the gravity met with formerly.

Letter from General Petain to the American Red Cross

General Petain, commander in chief of the Armies of the North and Northeast, addressed a letter to Colonel Gibson, commissioner for France of the American Red Cross, in which he acknowledged receipt of the notice that the American Red Cross had voted a new credit of 10 millions for the relief of French soldiers and officers, and extended his personal thanks and the thanks of the armies under his command for this kindness. He made acknowledgment of the valuable moral and material aid rendered by the American Red Cross, and did not fail to extend his appreciation to the people of the United States as a whole.

Interallied Social Hygiene Congress

The Comité national de l'éducation physique et de l'hygiène sociale, presided over by M. Henry Paté, has decided to organize, with the assistance and under the patronage of the government, an interallied congress of social hygiene, whose object will be the reconstruction of the devastated regions. This congress will be held in Paris early in 1919, and will have an interallied social hygiene exposition.

Office of Food Controller

The under-secretary of state of provisioning has established a food controller's office for the purpose of facilitating the work of the authorities in regulating prices, and in securing and distributing food to the civil population, calling to its assistance experts on syndical organizations, sales and production.

Making Tuberculosis a Reportable Disease

The matter of making tuberculosis a reportable disease having again been made a subject for discussion by the public authorities, the Conseil d'administration du Syndicat des médecins de la Seine, has issued the following statement: "The Conseil d'administration believes that it is absurd to make tuberculosis a reportable disease before ample proper means for treating these patients have been provided (dispensaries, sanatoriums, special hospitals, farm colonies, etc.). The compulsory declaration of the disease, to which the Syndicats médicaux have on numerous occasions made objection, is not even justified by the usefulness of the disinfection, made by order of the law, of the home of the patient. Such disinfection is of value only when made at the time the patient leaves the domicile. Applied under any other conditions, the tuberculous patient becomes an object to be dreaded, an outcast, and this disinfection, moreover is inefficacious. The only effectual disinfection is that done by the patient or those around him, repeated every day; all these persons must be instructed in hygiene in this line. Tomorrow as well as today, the attending physician will apply only the measures taken in the interest of the patient and his family, and he will not have any respect for administrative decisions or ordinances which may conflict with one or the other."

American Red Cross Hospitals in Vicinity of Paris

Military Hospital No. 7 of the American Red Cross has been opened at Malabry near Plessis-Robinson, about ten kilometers from Paris. The hospital is placed in a park by permission of the département de la Seine, valid for the duration of the war. The hospital opened with about 600 beds. The American Red Cross now maintains in and around Paris seven hospitals: the former American Ambulance at Neuilly; the hospital of Dr. J. A. Blake; the hospital of the Whitelaw Reids; the military hospital of Joinville-le-Pont; the Auteuil hospital; the Neuilly hospital for diseases of the skin, and the new Malabry hospital.

Donation to Academy of Medicine

Dr. Dragovitch has donated to the Académie de médecine bonds of the value of 2,000 francs, bearing 5 per cent. interest, for the purpose of founding two prizes, one for the best work on the etiology and treatment of mental diseases, and the other on the etiology and treatment of diseases of metabolism.

Deaths

Major Joseph Biddleman Bissell ⊕ **M. C., U. S. Army,** New York City, College of Physicians and Surgeons in the City of New York, 1883; aged 59; chief surgeon of U. S. General Hospital No. 2, Fort McHenry, Md.; clinical professor of surgery in University of Bellevue Hospital Medical College; a member of the American Urological Association; for nearly twenty years a member of the surgical staff of Bellevue and St. Vincent's hospitals; consulting surgeon to the Hospital for Deformities and Joint Diseases, and to the German Hospital and Dispensary; surgical director of the Radium Institute of New York, and president of the American Radium Society; died in Mount Sinai Hospital, New York City, December 1, from septicemia.

Lieut. Thomas Jefferson Palmer ⊕ **M. C., U. S. Army,** McAlester, Okla.; University of Illinois, Chicago, 1905; aged 39; a veteran of the war with Spain; who, after a course of training at the Medical Officers' Training Camp, Fort Riley, Kan., was assigned to duty with Field Hospital No. 27, Sixth Division; and sailed for France, June 28; while on duty, September 10, at a French Hospital on the Western Front, was gassed, and died October 28, at Base Hospital No. 14, Bordeaux, France.

John Down Heritage, Glassboro, N. J.; University of Pennsylvania, Philadelphia, 1863; aged 81; assistant surgeon, Eleventh New Jersey Infantry during the Civil War; taken prisoner at the battle at Ream's Station, and afterward confined in Libby Prison, Richmond; in 1873 elected grand chancellor of the Knights of Pythias of New Jersey; died at his home, November 20.

Watson Lovell Wasson ⊕ Waterbury, Vt.; University of Vermont, Burlington, 1901; aged 44; professor of mental diseases in his alma mater; a specialist in psychiatry; superintendent of the Vermont State Hospital for the Insane, Waterbury; died in that institution, November 24, from pneumonia.

James Smith Ford, Loomis, N. Y.; College of Physicians and Surgeons in the City of New York, 1910; aged 32; a member of the Medical Society of the State of New York; senior assistant physician of the Loomis Sanatorium; died in that institution, November 21, from pneumonia following influenza.

Asst. Surg. Bertram L. Cunningham ⊕ **Lieut. (j. g.), U. S. N. R. F.,** Jamaica, N. Y.; New York Homeopathic Medical College, 1913; aged 30; on duty at the Medical Office, Third Naval District Headquarters, New York City; died in New York City, October 21, from bronchopneumonia following influenza.

Lieut. Samuel Dennison Shannon ⊕ **M. C., U. S. Army,** Baltimore; University of Maryland, Baltimore, 1915; aged 26; who entered the Medical Corps in May, 1917, and was later transferred to the British Medical Service, died in the Red Cross Hospital, London, November 5, from influenza.

Capt. James McFarland ⊕ **M. C., U. S. Army,** Burlington, N. J.; University of Pennsylvania, Philadelphia, 1911; aged 31; who entered the service in April, 1917, and after a tour of duty at Camp McClellan, Ala., went to France in June, 1918; died, October 24, from wounds received in action.

Eldora Alice Thomas, Chicago; University of Illinois, Chicago, 1913; aged 33; for several years a medical missionary in Sierra Leone, West Africa; more recently house physician at the University Hospital, Chicago; died in that institution, November 26, from valvular heart disease.

Roy Herman Renn, Williamsport, Pa.; Jefferson Medical College, 1906; aged 40; a member of the Medical Society of the State of Pennsylvania; while hurrying to the train after making a professional call at Nisbet, Pa., November 28, died suddenly from heart disease.

Joseph Felix Corrigan, St. Leo, Fla.; College of Physicians and Surgeons in the City of New York, 1871; aged 72; one of the founders of the New York Foundling Asylum, and for many years house physician at Bellevue Hospital; died at his home, November 28.

Amelia M. Augur, Cooperstown, N. Y.; Northwestern University, Woman's Medical School, Chicago, 1880; aged 62; died in the City Hospital, Binghamton, October 31, as the result of injuries received when she was run down by a motor truck, in Endicott.

Col. Samuel M. Horton ⊕ **M. C., U. S. Army** (retired), Albany, N. Y.; Jefferson Medical College, 1861; aged 80;

who entered the Army as assistant surgeon in 1861, and was retired June 6, 1894, on account of disability in line of duty; died in Albany, recently.

Lieut. Frederick George Carow ⊕ **M. C., U. S. Army,** Brooklyn; Jefferson Medical College, 1917; aged 30; on duty with the One Hundred and Fifty-Second Depot Brigade, Camp Upton, N. Y.; died in the camp hospital, October 16, from pneumonia.

Edward Everett Peck, Caldwell, N. J.; Bellevue Hospital Medical College, 1879; aged 64; a member of the Medical Society of the State of New Jersey; mayor of Caldwell; was found dead in his garage, November 22, from cerebral hemorrhage.

Lieut. LeCount Rochambeau Lovellette ⊕ **M. C., U. S. Army,** Chicago; University of Illinois, Chicago, 1917; aged 25; on duty in the base hospital at Fort Sam Houston, San Antonio, Texas; died at his post, December 2, from lobar pneumonia.

John Gustavus Winkelman, Brooklyn; New York University, New York City, 1879; aged 62; formerly a member of the staff of Kings County and St. Catherine's Hospitals; died at his home, November 24, from heart disease.

Omar Clinton Henry, Minerva, Ky.; Hospital College of Medicine, Louisville, Ky., 1905; aged 37; a member of the Kentucky State Medical Association; died at his home, October 13, from pneumonia following influenza.

Died in the Service
IN FRANCE
Major Shadworth O. Beasley, M. C., U. S. Army, 1876-1918
(See The Journal, last week, p. 1930)

Lieut. Albert Fabian Welin ⊕ **M. C., U. S. Army,** Rio Vista, Calif.; Leland Stanford Jr. University, Palo Alto, and San Francisco, 1915; aged 28; died at Camp Kearney, Calif., October 31, from pneumonia following influenza.

Ralph Almeron Parker, Greene, Me.: Bowdoin Medical School, Brunswick and Portland, Me., 1904; aged 57; at one time a member of the Maine Medical Association; died at his home, October 13, from heart disease.

John Patrick Rowan, Brooklyn; Long Island College Hospital, Brooklyn, 1898; aged 41; a member of the staff of the Brooklyn, St. Peter's, Holy Family, St. Mary's and St. Catherine's hospitals; died, November 27.

Sarah C. Lowry, Portsmouth, Ohio; Laura Memorial Woman's Medical College, Cincinnati, 1896; aged 45; died at her home, Kitt's Hill, Scioto County, Ohio, November 20, from pneumonia following influenza.

Leora Franklin Hicks ⊕ Amo, Ind.; Medical College of Indiana, Indianapolis, 1901; aged 44; on duty at the base hospital, Nitro, W. Va.; died in that institution, October 27, from pneumonia following influenza.

Charles Thomas Amason, Doles, Ga.; Louisville (Ky.) Medical College, 1893; aged 59; at one time a member of the Medical Association of Georgia; died at his home, November 12.

Newton Elliott Smith, Fayette, Mo.; Washington University, St. Louis, 1903; aged 38; a member of the Missouri State Medical Association; died at his home, October 12, from pneumonia following influenza.

Charles T. Thomas, Lebanon Junction, Ky.; Medical College of Evansville, Ind., 1881; aged 65; a member of the Kentucky State Medical Association; died at his home, October 19, from bronchopneumonia.

Daniel A. Holliday, Fairmont, Ind.; Kentucky School of Medicine, Louisville, 1893; aged 59; formerly a member of the Indiana State Medical Association; died at his home, November 24, from heart disease.

Lieut. Thomas Reed Ferguson ⊕ **M. C., U. S. Army,** Kirkwood, Pa.; Jefferson Medical College, 1906; aged 33; died in the Lancaster, Pa., General Hospital, October 2, from pneumonia following influenza.

Sylvester E. Goss, Wyaconda, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1888; aged 56; a member of the Missouri State Medical Association; died at his home, October 4, from heart disease.

Otto C. McDannell, Lowell, Mich.; College of Physicians and Surgeons, Keokuk, Iowa, 1867; aged 74; a member of the Michigan State Medical Society; died at his home, November 20, from influenza.

Austin LaMonte, Carmel, N. Y.; University of Michigan, Ann Arbor, 1861; aged 81; a member of the Medical Society of the State of New York; died at his home, November 9, from arteriosclerosis.

William Lundy Brown, Los Angeles; Bennett Medical College, Chicago, 1875; aged 68; at one time a member of the Medical Society of the State of California; died at his home, November 21.

William C. Jamison, Fairmont, W. Va.; Baltimore University, 1888; aged 67; at one time a member of the West Virginia State Medical Association; died at Weston, W. Va., November 23.

Andrew Orr Hastings, Toronto, Ont.; University of Victoria College, Coburg, Ont.; 1886; L. A. H., Dublin, 1887; aged 63; died at his home, November 21, from a nervous breakdown.

James Farnsworth Rodgers ⊕ Bowling Green, Ky.; Rush Medical College, 1886; aged 61; died in the Deaconess Hospital, Louisville, Ky., August 31, from carcinoma of the stomach.

Isaac P. Primrose, Nelsonville, Ohio; Starling Medical College, Columbus, 1865; aged 86; a member of the Ohio State Medical Association; died at his home, November 23.

Cheever S. Clark, Canton, Ohio; University of Maryland, Baltimore, 1887; aged 60; a member of the Ohio State Medical Association; died at his home, November 22, from arteriosclerosis.

Will L. Allen ⊕ National City, Calif.; King Eclectic Medical College, Des Moines, Iowa, 1889; aged 59; died at his home, November 18, from chronic nephritis.

Andrew Mason Taylor, Caney, Kan. (license, Kansas, 1901); aged 84; a practitioner for sixty years; died at his home, November 25, from arteriosclerosis.

Alfred Dow Long ⊕ San Diego, Calif.; Harvard Medical School, 1907; aged 42; died in the Elwyn Sanitarium, National City, Calif., November 17, from uremia.

Jonas Larson ⊕ Cozad, Neb.; John A. Creighton Medical College, Omaha, 1915; aged 33; died at his home, November 10, from pneumonia following influenza.

Antonio Rubino, Paterson, N. J.; University of Naples, Italy, 1893; aged 51; died in the Barnert Memorial Hospital, Paterson, November 22, from influenza.

William L. L. Foster, Waco, Neb.; Barnes Medical College, St. Louis, 1898; aged 45; died at his home, November 22, from pneumonia following influenza.

DeWitt Clinton Laverty ⊕ Middletown, Pa.; Jefferson Medical College, 1877; aged 60; died in the Harrisburg Hospital, November 14, from appendicitis.

Charles G. Dawley ⊕ Los Angeles; University of Southern California, Los Angeles, 1903; aged 39; died at his home, October 9, from bronchopneumonia.

Aaron A. Nefe, Lookout Mountain, Tenn.; Cincinnati College of Medicine and Surgery, 1869; aged 65; died at his home, November 8, from influenza.

Capt. Pleas Daniel Barnhill ⊕ **M. C., U. S. Army,** Brenham, Texas; University of Texas, Galveston, 1876; aged 52; died October 31, from arteriosclerosis.

Hyman R. Wiener ⊕ Harrisburg, Pa.; University of Maryland, Baltimore, 1912; aged 29; died in the Harrisburg Hospital, October 14, from influenza.

Walter Charles Paine, New Holland, Ill.; Rush Medical College, 1895; aged 52; died at his home, October 13, from pneumonia following influenza.

Linnaeus Jones Hunter, New York City; New York University, New York City, 1889; aged 56; died at his home November 27, from pneumonia.

Lanea Cornelius, Quapaw, Okla.; Hahnemann Medical College, Kansas City, Mo., 1910; aged 33; died at his home, November 7, from pneumonia.

John Meikle Caldwell, Springerville, Ariz.; Detroit College of Medicine and Surgery, 1916; aged 26; died in October at Springerville, from influenza.

Robert Alexander McClelland ⊕ Yorkville, Ill.; Rush Medical College, 1878; aged 64; died at his home, November 29, from cerebral hemorrhage.

John Robert Mason, Lancaster, Tenn.; University of Nashville, Tenn., 1905; aged 36; died in Baltimore, November 20, after a surgical operation.

George W. McDowell, Rockford, Ill.; Hahnemann Medical College, Chicago, 1889; aged 52; died at his home, November 22, from myocarditis.

Henry William Rose, Brooklyn; New York Homeopathic Medical College, New York City, 1876; aged 69; died at his home, November 29.

Hammel House Wright, Little Rock, Ark.; (license, Mississippi, 1910); aged 33; died in Little Rock, October 11, from pneumonia.

B. J. Hardeman, Martin, Tenn. (license, Tennessee, 1889); died at the home of his daughter in Martin, November 18, from influenza.

Stephen L. C. Bredin, East Orange, N. J.; University of Pennsylvania, Philadelphia, 1855; aged 83; died at his home, November 18.

George Lang, Valdosta, Ga.; Savannah, Ga., Medical College, 1861; aged 79; a Confederate veteran; died at his home, November 15.

Maurice C. Jacobs, Kansas City, Mo.; Eclectic Medical Institute, Cincinnati, 1866; aged 80; died at his home, November 16.

Kenneth M. Stell, Cunningham, Texas; Chicago College of Medicine and Surgery, 1911; aged 37; died at his home, October 22.

William Francis Lewis, Anoka, Neb.; Rush Medical College, 1884; aged 57; died at his home, November 22, from pneumonia.

John Henry Blomenkamp, Barada, Neb.; Rush Medical College, 1911; aged 32; died at his home, November 26, from influenza.

Fortunatus James Sconzo, Brooklyn; Long Island College Hospital, Brooklyn, 1917; aged 26; died at his home, October 9.

Mary V. Cosford, Spokane, Wash.; Eclectic Medical Institute, Cincinnati, 1885; aged 62; died at her home, October 28.

Charles Stirling, Oakland, Calif; University of Illinois, Chicago, 1888; aged 63; died at his home, November 28.

W. T. Reagan, McNeil, Ark. (license, Arkansas, 1905); aged 36; died at his home, November 27, from influenza.

Cyrus W. Babcock, Buffalo, N. Y. (license, New York, 1866); aged 81; died at his home, November 7.

James Roy Mains ⊕ Powell, Wyo. (license, Wyoming, 1904); aged 41; died at his home, October 23.

Marriages

Capt. John Harold Carroll, M. C., U. S. Army, New York City, on duty with the American Experitionary Forces in England, to Miss Jean MacGregor, C. A. M. C., on duty with Fifteenth Canadian General Hospital, Taplow, England, in London, September 12.

Asst. Surg. Franklin Myers Goodchild, Lieutenant (junior grade), U. S. Navy, New York City, assigned to duty at the U. S. Naval Hospital, Brooklyn, to Miss Frederika Riesberg of Park-Hill-on-Hudson, N. Y., in New York City, November 16.

Lieut. Lee Wallingford Darrah, R. A. M. C., Brookville, Pa., on duty with the British Experitionary Forces in France, to Miss Margaret Moysey of Knightsbridge, London, England, November 7.

George W. Harpel, Rochester, N. Y., to Miss Grace Tower Tier of Philadelphia, at Llanerch, Pa., November 19.

Homer Burlington Shoup to Miss Cora Harper, both of Sharpsville, Ind., at Logansport, Ind., November 23.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

EMETIN BISMUTH IODID ACCEPTED FOR N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has voted to accept emetin bismuth iodid for New and Nonofficial Remedies and to include Emetin Bismuth Iodid-Abbott and Bismuth Emetin Iodid-Mulford as accepted brands. It has authorized publication of the following report on emetin bismuth iodid.

W. A. Puckner, Secretary.

Historical: Emetin bismuthous iodid was introduced by A. G. DuMez in 1910. It varies considerably in composition according to its preparation. The sample analyzed by DuMez contained about 29 per cent. of emetin. The compound is insoluble in water and dilute acids, but is decomposed by alkalis. On the basis of these solubility characters, DuMez in 1910 suggested that it should pass the stomach unchanged, and thus have a lesser tendency to produce vomiting and diarrhea; but that it would presumably be decomposed and absorbed in the alkaline intestines.

DuMez did not have any clinical trials made, and his suggestion was neglected, until it was revived by Dale in 1916. Dale took up the subject because of the unsatisfactory results from the hypodermic emetin treatment in chronic cases, and carriers, of amebic dysentery. He assumed that the intestinal ameba at least might be reached more directly by oral administration than by the circulation. He therefore prompted the clinical trial of the DuMez compound, with promising results.

Administration: Dale employed a dosage of 3 grains of emetin bismuth iodid (corresponding to about 1 grain of emetin) daily, for 12 days. This dosage has been followed by subsequent observers. Dale gave the daily quotum at a single dose, during or after a full meal. Some of the others have given it in divided doses, and at different times. Apparently the midday meal is best, since the after-effects then cause the least inconvenience.

Dale also suggested a keratin-coated pill. As the coating of pills with keratin is now generally recognized to be of little value as a means of preventing the disintegration of pills by the gastric juice (Reports Coun. Pharm. & Chem., 1911, p. 58) salol-coated pills or capsules should be tried and also the wax mass proposed by N. S. Davis (The Journal, Oct. 14, 1916, p. 1160) and the procedure of Ballenger and Elder (The Journal, Jan. 17, 1914, p. 197).

Efficiency: All the clinical observers report satisfactory results. The disappearance of amebas from the stools is generally complete and apparently permanent even in chronic cases and carriers, and in patients in whose cases the hypodermic injections had failed. The compilation of Waddell and co-workers (1917) is most comprehensive. It shows about 18 per cent. of failures in carriers. This may be considered an excellent showing. The method in acute cases also is at least equal to the hypodermic administration of emetin hydrochlorid.

Side-Actions: The statements in regard to these vary somewhat, as might be expected. It is clear, however, that the preparation is far from nonirritant and produces much more gastro-intestinal disturbance than does the hypodermic method. Waddell *et al.* report that practically all patients respond either by purging or vomiting or both; the two phenomena being generally of inverse severity.

Low and Dobell state that "some of these [symptoms] recall to one's memory the old ipecacuanha days," although the symptoms are generally not quite so severe. Unfortunately there are no published records of parallel observations on the severity of these symptoms, comparing the plain ipecac treatment, by Simon's method for instance, with the emetin-bismuth compound and with the adsorption preparation ("Alkresta Ipecac").

Waddell *et al.* state that the vomiting starts in about one hour, the diarrhea in three hours. They can be checked only by opiates. Practically no tolerance is acquired. The vomitus generally has the red color of the drug, showing that the keratin coating had dissolved in the stomach. Evidently this confers but little protection. The severity of the nausea and vomiting varies considerably for different patients. This variation is not to be accounted for by variations in the drug, for this was of the same origin in most of the series. Presumably the variable reaction of the stomach may be an important factor in gastric solution and local irritation by the drug. However, it must be remembered that the emesis is largely of central origin (Eggleston and Hatcher, 1915), and therefore could not be avoided by any method that would permit the absorption of the emetin.

Evidently, the side-effects of the drug are still very undesirable, although they do not preclude its use and are less disagreeable than with the old methods of oral administration. In view of the distinct field of usefulness for the oral method from the standpoint of efficiency and convenience, the emetin bismuth iodid preparations have been accepted for New and Nonofficial Remedies.[1] It is desirable that further methods of insuring gastric insolubility be sought. It is also worth while to determine if smaller daily doses may not perhaps be efficient.

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Correspondence

GENITAL GONORRHEA IN EARLY CHILDHOOD

To the Editor:—The article by Dr. Haines on "Acquired Genital Syphilis in the Infant" (The Journal, Feb. 9, 1918, p. 370) prompts me to report five cases of gonorrhea in early childhood that came to my notice at my former dispensary clinic in Chiengmai, Siam. I believe that this is a fairly rare condition anywhere. All five cases were in girls ranging from 2 to 7 years of age.

A Chino-Lao girl, aged 2 years, complained of painful micturition. I suspected urinary calculus of the bladder, as this is very common; but examination showed the whole vulva smeared with a thin, creamy pus, a microscopic examination of which disclosed the gonococci in large numbers. I then questioned the father, who with practically no hesitation said that he had gonorrhea and that he had expressed some of the pus from his penis onto his finger and then deliberately rubbed it into the vagina of his daughter. When asked why, he said that if he could only give his infection to a virgin he would be cured at once of his gonorrhea. I understand that such a superstition is common among the negroes of America and may be an explanation as to the source of infection in Dr. Haines' case.

Three little sisters, ranging in age from 4 to 7 years, all seen within ten days of each other, children of a well-to-do Eurasian, presented the same symptom of a purulent discharge from the vagina, and all had gonococci by microscopic examination. The source of infection here was the nurse girl, who performed the act of masturbation with her little charges.

The 5-year-old daughter of a well-to-do Siamese had the same experience as the three sisters. The microscopic findings were positive. This was also a case of congenital syphilis.

In all five cases the treatment consisted in keeping the parts free from pus and applying a 2 per cent. silver nitrate solution once a day, with from 2½ to 5 grains of a hexamethylenamin solution by mouth three times a day. All the patients responded very quickly and were apparently cured in from ten days to a fortnight.

C. W. Mason, M.D., Chieng Rung, Yunnan, China.

INFLUENZA IN HORSE AND MULE

To the Editor:—Physicians are aware of a disease in horses and mules called "influenza." It is [illegible] it is not due to the same cause as influenza of man. However, it may be of interest to know that this disease in horses and mules bears a wonderfully striking resemblance to influenza in man, both in the influenza itself and in its complications.

Influenza in the horse and mule is confined almost exclusively to so-called green horses, namely, those shipped to infected sales stables for the first time. One attack usually produces immunity, but not always. The disease is more or less common during the shipping season every year, but the complications vary greatly from year to year as to their frequency and the virulence of the secondary infection. Such a history is not unlike that of influenza of man.

The cause of influenza in the horse and mule has not been determined, although it is probably a filtrable virus. If the influenza remains uncomplicated, it is of little or no consequence and is referred to as a shipping fever or shipping cold; every few years, however, a general epizootic or local enzootics occur with secondary infections often resulting in the death of many animals. Pneumonia and other respiratory complications are most common, although in some instances intestinal and nervous complications may exist. A bipolar staining organism of the pasteurella group has often been found in the complications.

As a specific disease, the trouble has prevailed throughout this country for a great many years, and many people still recall the serious form it took in 1870-1872, under the general term "epizootic" and the more specific "pink eye." Again, in 1900-1901, a more or less serious outbreak occurred. During the past few years, the complications have varied from year to year. Six years ago this fall and coming winter, some horse dealers located at various sections of the country lost as much as 50 per cent. and more of their shipments. Last fall and winter, losses were frequently quoted from 5 to 25 per cent. of shipments. The Army has likewise been a very heavy loser at all of its concentration and remount depots.

The symptoms of influenza in the horse when uncomplicated are rising temperature to a greater or less degree with a similar increase in the pulse rate and respiration, and loss of appetite to a certain extent, with some indisposition and depression. The mucous membrane of the eye shows more or less watery secretion and yellowish red color (pink eye).

The necropsy findings in uncomplicated influenza are usually limited to a catarrhal condition of the mucous membranes of the respiratory tract and of the eye. When complicated, as previously stated, varying forms and degrees of pneumonia are common, accompanied by frequent pleurisy with effusion. In other cases, the complication is largely that of edema of the lungs, or the edema may be confined to the larynx or extend throughout the whole of the respiratory tract. Again, in some instances, the predominating complication is marked by a very acute inflammation of the intestine, which previously led to a profuse diarrhea. In still other cases, the most marked findings have been an inflammation of the meninges of the brain and spinal cord.

Prophylaxis against the influenza is to be largely effected by sanitary measures in keeping susceptible animals unexposed to the infection, and the disinfection of infected premises. Little has been accomplished in the production of a vaccine or serum preventing the influenza, but apparently good results have been secured in preventing the complications when using vaccines composed of the various organisms found in the different complications.

The treatment of influenza calls for very little other than good hygienic and sanitary measures during the course of the disease, but such measures are only of limited value in the influenza complications. Here again, apparently good results, however, have been attained when the animals are treated early with an immune serum produced by the organisms in the complication. Such serum to be effective, of course, must be administered early in the course of the trouble.

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[1] See New and Nonofficial Remedy Department of this issue.

G. A Roberts, D.V.S., Raleigh, N. C.
Veterinarian, Department of Veterinary Medicine, North Carolina College of Agriculture and Mechanic Arts.

GERMANY'S GUILT FOR INTRODUCING WAR GASES

To the Editor:—In an editorial in The Journal, November 23, you refer to the suggestion that asphyxiating gases be used in warfare as having been rejected by the British government by reason of the inhumanity of the procedure. The actual facts are that at the first Hague convention in 1899, when twenty-six nations were represented, a proposal to prohibit the use of such gases was made and twenty-four nations agreed, the dissenting nations being Great Britain and the United States. In 1907, the matter was again brought up. This was the second general convention. Great Britain gave way and the United States stood alone in refusing to agree to the prohibition.

The chairman of the convention—a Dutch delegate—begged Admiral Mahan—the opponent of the resolution—to sign for the sake of humanity, but he declined. His reasons for this action are given in Hull's book, "The Two Hague Conferences." They are, in my opinion, unanswerable. For further details see James Brown Scott's work on the Hague conferences.

Inasmuch as a Hague rule provides that when belligerents are all signatories to any agreement they should observe this, but if any one takes in an ally that is not signatory the agreement lapses, it follows that the moment the United States entered the war, all agreements in regard to the nonuse of asphyxiating gases would have been canceled.

Henry Leffmann, M.D., Philadelphia.

[Comment.—Germany was the first nation to violate international agreement on the use of asphyxiating gases, employing these in a surprise attack in the battle of Ypres, April 23, 1915, long before the United States entered the war.—Ed.]

REDUCTION OF RESPIRATION FOR INSOMNIA

To the Editor:—I start with the assumption that every insomnia patient has been carefully examined for any pathologic condition, especially for intestinal disorders, and that all medical and surgical conditions have been met.

The suggestions offered herein are for that class of patients that cannot forget their business when they want to sleep and should be asleep, or those who have troubles or worries from which they are unable to travel or take a vacation. My first efforts began about ten years ago, along the popular line of mental gymnastics, in an attempt to control the mental states. Since the dreaming state lies between consciousness and sound sleep, just at the threshold of sleep the idea was to make them dream themselves to sleep. Directions were to avoid reasoning and analysis, to direct any train of thoughts into the absurd and grotesque. Mention is made of this method because it has some value; about 20 per cent. of patients will admit benefit from it alone, and it can be practiced in conjunction with the second experiment. This second method deals with a more primitive physiologic function, which also has a typical threshold phase and is fortunately subject to control of the will, even by those whose minds are fairly racing with themselves.

I am sure that every surgeon, or anybody connected with an operating room, has noticed that patients put to sleep pass through a semiconscious stage in which respirations are slow and shallow; it is often hard to detect them at all until more is given. The same occurs with gas, which does not irritate the respiratory tract. Natural sleep is ushered in in the same manner; the shallow, slow, threshold phase can be studied in this case without the excitement stage. It is through this natural physiologic pathway that we should attempt to lead our subjects and imitate Nature's process.

The subject should be placed in the best possible environment, with good ventilation. He should be quiet and warm, and should be directed to find a comfortable position and stay in it. He should breathe slowly and shallowly, not too slowly at first until the body becomes accustomed or adjusted to being quiet and in the recumbent position. After allowing about ten minutes for this, he should breathe less and less. Different subjects apply the same principle differently; they learn little tricks that suit their own case. Probably the best method is for him to take a fair respiration and hold after exhalation as long as he can with comfort, then slowly take another, exhale and hold again. He should be directed to continue in this manner. The subject may at first feel that he cannot control or diminish his respirations, but a little patience and effort will in a short time (within two weeks) prove that he can.

I have tried this method of respiratory control in about twenty cases during the past year. Results have seemed so good and its applications so simple that I am anxious for others to try it out fairly and report their success.

G. J. Mautz, M.D., Fort Riley, Kan.
First Lieutenant, M. C., U. S. Army.

THE PROPHYLAXIS OF INFLUENZA

To the Editor:—At the end of the first week of the influenza epidemic at Newport (Sept. 15, 1918), while the disease was raging with great severity, 1,000 men were removed from the receiving barracks to the Vanderbilt farm (Camp Admiral Oman), 7 miles out of town. Here they were placed in large pyramidal tents, eight men to each tent.

During the first three days, ninety-three new cases of influenza developed among the men at the camp. September 19, the fourth day at the camp, no new cases developed and the epidemic practically terminated, only an occasional sporadic case of influenza developing thereafter.

The men at the camp mushroomed their tents every sunny day, ate at mess tables placed in the open, and were allowed no liberty during the first five weeks at the camp. It was noticed at the same time that the men in tents at the training station suffered equally with those in the barracks. The explanation of these two apparently diametric experiences lies in the fact that the men in tents at the training station ate in mess halls, where there is more or less group gathering.

The lesson to be learned from the medical experience at Camp Admiral Oman is that epidemic influenza can be checked to a great extent by plenty of fresh air and sun and by the preventing of group gathering and crowding, such as takes place in theaters, churches, etc., in civilian life and in barracks and mess halls in military life.

Charles H. Carroll, M.D., Newport, R. I.
Lieutenant, Junior Grade, U. S. N. R. F.

ADVANTAGES OF A NATIONAL DEPARTMENT OF HEALTH

To the Editor:—I believe The Journal has always favored a national health department or some arrangement by which the national government would have more power to enforce regulations tending to the prevention of disease and handling health problems for the good of the public in general. Conservation of life is more essential than conservation of labor, food, etc. I believe that if you could in some way bring more prominently to the people's mind the fact that during the first year of the war, barring battle fatalities, the death rate in the Army and Navy from disease was only one third as great as that in civil life of men of the same age before the war began, the public would favor such a department. I believe that if the recent epidemic of influenza had been handled by the government in all parts of the United States as it was in the Army and Navy, we would have saved thousands of lives and millions in money to the government and the people. What we would have saved the United States in this one epidemic would have taken care of a special health department for several years to come.

J. H. Wolfe, M.D., Los Angeles.

ORIGIN OF THE USE OF IODIN FOR SKIN STERILIZATION

To the Editor:—In regard to crediting achievements to foreign countries, I wish to record a memorandum:

Generally, perhaps, it is assumed that the use of tincture of iodin for skin disinfection originated with Grossich and was first recorded by him in the *Zentralblatt für Chirurgie,* Oct. 31, 1908, p. 1289. As a matter of fact, I began the use of tincture of iodin for the purpose of skin disinfection in the latter part of the year 1905, in my surgical service, and called attention to it in an article entitled "Some of the Uses of Iodin in Surgical Practice" (The Journal, April 14, 1906, p. 1102). Again, I published an article calling attention to the same method in *American Medicine,* November, 1906.

I reviewed the history of the iodin method of skin sterilization in a paper read before the American Association of Obstetricians and Gynecologists at Louisville, Ky., in September, 1911, and published in the *American Journal of Obstetrics,* 1912, **65,** 6.

J. E. Cannaday, M.D., Charleston, W. Va.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will *not* be *noticed.* Every letter must contain the writer's *name and address,* but these will be omitted, on request.

WEARING UNIFORM AFTER DISCHARGE

To the Editor:—Will you please publish whether or not medical officers can continue to wear their uniforms and insignia after discharge? I would suggest that the Medical Reserve Corps should be open for enlistment to any ex-medical officer who desires to enter, with the privilege of wearing the full regalia with, perhaps, the exception of wearing *the U. S. R. on the coat collar* instead of the U. S. now worn.

F. M. O'Kelley, Sikesman, Mo.

Ex-Captain, M. C., U. S. Army.

Answer.—As noted in The Journal last week in the discussion concerning the demobilization of medical officers, a questionnaire has been or will be sent to medical officers on which they may indicate their desire to remain in the service. Those who are qualified may be admitted to the regular Medical Corps or to the Medical Section of the Officers' Reserve Corps. An earlier ruling of General March stated *that all men honorably discharged from* the service might continue to wear their uniforms for a period of three months. A later ruling states:

> The provision of section 125, national defense act, approved June 3, 1916 (Bull. No. 16, W. D., 1916), which permits any person who has been honorably discharged from the United States Army, Navy, or Marine Corps, Regular or Volunteers, to wear his uniform from the place of discharge to his home, within three months after date of such discharge, is held to apply to reserve officers when transferred from the active to the inactive list. Reserve officers, *therefore, will* be permitted to wear their uniforms from the place of last duty to their homes within three months of the date on which they were transferred to the inactive list.

THE USE OF LIPOVACCINES AGAINST PNEUMONIA

To the Editor:—I read in The Journal, *Nov. 23, 1918, p. 1734,* an item relative to vaccination against pneumonia. Where may the lipovaccine against the pneumococcus be procured?

D. W. Relihan, M.D., Smith Center, Kan.

Answer.—The lipovaccines described are manufactured by the Army Medical Laboratory. So far as we know, they are not yet available commercially, but are *now in the* experimental stage. The following articles on the subject of lipovaccine have appeared in The Journal:

Whitmore, E. R.; Fennel, E. A., and Petersen, W. F.: *Experimental* Investigation of Lipovaccines, *Feb. 16, 1918, p. 427.*

Whitmore, E. R., and Fennel, E. A.: Experimental Investigation of Lipovaccines, March 30, *1918,* p. *902.*

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alabama: Montgomery, Jan. 14. Chairman, Dr. S. W. Welch, Montgomery.

Arizona: *Phoenix, Jan. 7.* Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.

Colorado: Denver, Jan. *7.* Sec., Dr. David A. Strickler, *612* Empire Bldg., *Denver.*

District of Columbia: Washington, Jan. 14-16. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

Florida (E): Jacksonville, Dec. 16-17. Sec., Dr. G. A. Munch, *1806* Franklin St., Tampa.

Hawaii: Honolulu, Jan. 6. Sec., Dr. J. R. Judd, Honolulu.

Minnesota: Minneapolis, *Jan. 7-10. Sec., Dr.* Thomas McDavitt, 741 Lowry Bldg., St. Paul.

New Mexico: Sante Fe, Jan. 13. Sec., Dr. W. E. Kaser, East Las Vegas.

New York: Jan. 28-31. Albany, Buffalo, New York City *and* Syracuse. Mr. Herbert J. Hamilton, Asst. Prof. Exams., New York Dept. of *Education, Albany.*

North Dakota: *Jan. 7.* Sec., *Dr. G. M.* Williamson, 860 Belmont Ave., Grand Forks.

Oklahoma: Oklahoma City, Jan. 7-8. Sec., Dr. *J. J.* Williams, *Weatherford.*

Oregon: Portland, Jan. 7. Sec., Dr. H. S. Nichols, Corbett Bldg., Portland.

Pennsylvania: Philadelphia, Jan. 7-9. Sec., Mr. Nathan C. Schaeffer, *State Capitol, Harrisburg.*

Rhode Island: Providence, *Jan. 2-3.* Sec., *Dr. B. U. Richards,* State House, Providence.

South Dakota: Pierre, Jan. 14. Sec., Dr. P. B. Jenkins, Waubay.

Utah: Salt *Lake City, Jan.* 6. Corres. Sec., Dr. G. F. Harding, 405 *Templeton Bldg.,* Salt Lake City.

Washington: Spokane, Jan. 7-9. Sec., Dr. C. N. Suttner, 415 Old Nat'l Bk. Bldg., Spokane.

Wisconsin: Madison, Jan. 14. Sec., Dr. J. M. Dodd, 220 E. 2d St., *Ashland.*

North Carolina June Examination

Dr. H. A. Royster, secretary of the Board of Medical Examiners of North Carolina, reports the oral, practical and written examination held at Raleigh, June 24-28, 1918. The examination covered 15 subjects and included 72 questions. *An average of 80 per cent.* was required to pass. Of the 52 candidates examined, 49 passed and 3 failed. Eighteen candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Howard University (1917) 83.8; (1918) 80, 84.4, 84.7.		
College of Physicians *and Surgeons, Keokuk*	*(1877)*	80
Tulane University	(1910)	88.8
Johns Hopkins University	(1918)	89.4
University of Maryland (1918) 80.1, 85.7, 89.7.		
Boston University (1917) 83.8;	(1918)	84
Harvard University	(1918)	87.7
Columbia University	(1918)	89.8
North Carolina Medical College	*(1909)*	85.4
Jefferson Medical College (1918) 83, 84.1, 85, 85.1, 85.8, 85.8, 86.4, *86.5, 87.6, 88, 89.4, 89.7, 93.6, 94.*		
University of Pennsylvania (1918) 81.3, 85.7, 85.8, 86.8, 87.7, 87.8, 88, 88.7, 88.8, 90.5, 91.6, 92.3.		
Woman's Medical College of Pennsylvania	(1918)	90.1
Chattanooga Medical College	(1903)	80
Meharry Medical College	(1917)	80, 80
Tennessee Medical College	(1902)	80
Medical College of Virginia (1901) 80; (1917) 80.4;	(1918)	87.6
FAILED		
Leonard Medical *School*	(1912)	71.4
North Carolina Medical College	(1918)	72.1
Medical College of Virginia	(1918)	76.7

College — LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Atlanta School of Medicine	(1913)	Georgia
Northwestern Woman's Med. School	(1893)	Indiana
Rush Medical College	(1902)	Illinois
Baltimore Medical College	(1912)	Virginia
College of Physicians and Surgeons, Baltimore	(1886)	Mississippi
Maryland Medical College	(1908)	W. Virginia
University of Maryland	(1905)	Maryland
University of Michigan Medical School	(1916)	Michigan
Washington University	(1902)	Missouri
University of the City of New York	(1890)	New York
Medical College of Ohio	*(1896)*	*Ohio*
Medical College of the State of S. Carolina	(1913)	S. Carolina
Memphis Hospital Medical College	(1913)	New York
University of Tennessee	*(1893)*	*Tennessee*
Medical College of Virginia	(1899) *(1917)*	Virginia
University College of Medicine	*(1910)*	Virginia
University of Virginia	*(1889)*	Virginia

Massachusetts September Examination

Dr. W. P. Bowers, secretary of the Massachusetts Board of Registration in Medicine, reports the oral, practical and written examination held at Boston, Sept. 10-12, 1918. The examination covered 13 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 29 candidates examined, 20, including 9 osteopaths, passed, and 9, including 6 osteopaths, failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Chicago Hospital College of Medicine	(1918)	75
Boston University	(1918)	79, 81.8
Harvard University	(1917) 79.3; (1918)	77.1, 77.3, 83.
Tufts College Medical School	(1917) 75; (1918)	75.7, 77.7
Long Island College Hospital	(1880)	75
FAILED		
University of Maryland	(1916)	73
Middlesex College of Medicine and Surgery	(1918)	57.7
Laval University	(1917)	60

Dr. Bowers also reports that 6 candidates were licensed at the special examinations held for Emergency Influenza Service, from Sept. 27 to and including Oct. 8, 1918. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Johns Hopkins University	(1903)	83.5
Harvard University	(1882) 79.7; (1918)	80.7
University of Michigan Medical School	(1918)	79.5
Eclectic Medical Institute	(1904)	*
Ohio State University College of Hom. Med.	(1918)	81.4

*No grade given.

Colorado October Examination

Dr. David A. Strickler, secretary of the Colorado State Board of Medical Examiners, reports the written examination held at Denver, Oct. 1, 1918. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 13 candidates who took the physician's and surgeon's examination, 11, including 5 osteopaths, passed, and 2, including 1 osteopath, failed. Two candidates were dismissed on request, and one candidate was refused examination on account of bad moral character. Twenty candidates were licensed on credentials. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Chicago College of Medicine and Surgery	(1918)	90.7
Loyola University	(1917)	82.1
Baltimore Medical College	(1907)	81.8
Eclectic Medical University	(1917)	82.6
St. Louis University	(1918)	85.5
John A. Creighton Medical College	(1917)	81.7
FAILED		
Chicago Hospital College of Medicine	(1918)	64.5

College	Year Grad.	No. Licensed
LICENSED ON CREDENTIALS		
American Medical Missionary College	(1903)	1
Chicago Homeopathic Medical College	(1901)	1
College of Physicians and Surgeons, Chicago	(1893)	1
Hahnemann Med. Coll. and Hospital of Chicago	(1912)	1
Northwestern Medical College	(1883)	1
Northwestern University	(1896) (1908)	2
Rush Medical College	(1889)	1
Keokuk Medical College	(1897)	1
Tulane University	(1905)	1
University of Minnesota	(1917)	1
Barnes Medical College	(1909)	1
College of Physicians and Surgeons of St. Joseph	(1881)	1
Medico-Chirurgical College of K. C.	(1902)	1
St. Louis University	(1905)	1
University of Missouri	(1876)	1
John A. Creighton Medical College	(1903)	1
Medical College of Ohio	(1907)	1
Memphis Hospital Medical College	(1895)	1
Vanderbilt University	(1902)	1

Minnesota October Examination

Dr. T. S. McDavitt, secretary of the Minnesota State Board of Medical Examiners, reports the oral, practical and written examination held at Minneapolis, Oct. 1-4, 1918. The examination covered 15 subjects and included 80 questions. An average of 75 per cent. was required to pass. Seven candidates were examined, all of whom passed. Nine candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Chicago College of Medicine and Surgery	(1918)	83
Rush Medical College	(1918)*	91
College of Physicians and Surgeons, Baltimore	(1910)	81
University of Michigan Medical School	(1918)	91
University of Minnesota	(1918)†	88, 89
University of Pennsylvania	(1917)	92

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
College of Physicians and Surgeons, Chicago	(1908)	Illinois
Northwestern University	(1916) (1917)	Illinois
Johns Hopkins University	(1912)	S. Dakota
Boston University	(1909)	Texas
University of Michigan Medical School	(1912) (1917)	Michigan
Barnes Medical College	(1911)	Illinois
University of Nebraska	(1911)	Nebraska

* Received certificate for four years' work; degree will be granted after completion of internship.

† Received M.B. degree on completion of four years' work; M. D. degree will be granted on completion of internship.

Book Notices

ANATOMY OF THE HUMAN BODY. By Henry Gray, F.R.S., Lecturer on Anatomy at St. George's Hospital Medical School. Twentieth edition, revised and reedited by Warren H. Lewis, B.S., M.D.; Professor of Physiological Anatomy, Johns Hopkins University. Cloth. Price, $7.50. Pp. 1396, with 1247 illustrations. Philadelphia: Lea & Febiger, 1918.

In the review of so well known a book, nothing more is necessary than to record the changes that have been made. In this edition the special sections on embryology and histology have been distributed among the subjects under which they naturally belong. New matter on physiologic anatomy, laws of bone architecture, and the mechanics and variations of muscles has been added, occupying much of the space formerly devoted to applied anatomy. The sections on ductless glands and the nervous system have been largely rewritten. By means of diagrams and descriptions, the sympathetic nervous system is presented in a more rational manner than heretofore. The central connections of the spinal and cranial nerves are also emphasized. Many new illustrations have been added, especially in the section on the central nervous system.

THE HUMAN SKELETON: AN INTERPRETATION. By Herbert Eugene Walter, Associate Professor of Biology, Brown University. Cloth. Price, $1.75. Pp. 214, with 175 illustrations. New York: The Macmillan Company, 1918.

This is an admirable, succulent and refreshing study of the human skeleton. It is not a study of "dry bones," but is instinct with life in every page. The medical student will find in it constant references to comparative anatomy and the evolution of various bones or their individual parts which will surely arouse his interest and explain the biologic relation of the lower animals to man. The teacher of anatomy will find a freshness of style which helps to make anatomy not only a useful study but an interesting one. The author has also a genial sense of humor, which is as welcome as it is rare in books of this sort. The illustrations are excellent and sometimes new and very informing. They often teach quite as much as the text.

The Growth of Medical Science.—We sometimes speak of the science of medicine; this is euphemism. Often we say medicine is an art founded on science. We like to think of practice as built on the solid foundations of anatomy, physiology and pathology, and these as resting on the bed rock of biology, chemistry and physics. This is camouflage. A better figure is that of a house being gradually moved from ancient piling to granite foundation; from empiricism to experimentalism; from superstition to science. It behooves those who live in the house during the moving operations not to step on the rotten planks in the floor.—E. P. Lyon, *Texas State Journal of Medicine.*

Medicolegal

Injury to Employee from Vaccination

(Krout v. J. L. Hudson Co. et al. (Mich.), 166 N. W. R. 848)

The Supreme Court of Michigan sets aside an award of arbitrators that was affirmed by the industrial accident board in proceedings brought for the recovery of compensation for injury alleged to have been sustained by an employee from vaccination. The court says that the claimant was employed as a fitter for the J. L. Hudson Company, respondent, when a general vaccination of the employees of the company was performed by a physician who was an official of the board of health of the city of Detroit, who acted at the request of the board of health. He testified that the request of the board was communicated to the officers of the company, and that those officers through subordinates conveyed the request to the several departments. The claimant, together with several hundred other employees, submitted to the operation. It was her claim that within half an hour after the operation she felt pain in her arm extending upward into her neck, and that this condition continued for four days when she was obliged to discontinue work. Two days later she called a physician who diagnosed her trouble as "acute mastoiditis, lymphatic infection." Five days later he operated on her. The claimant remained in the hospital some two or three weeks and was convalescent for a considerable period thereafter. While the physician who did the vaccinating had himself vaccinated approximately 100,000 persons and testified that he never knew or heard or read of a case of acute mastoiditis being caused by vaccination, it was the opinion of the claimant's family physician that the mastoiditis was the result of a lymphatic infection, the germ of which (streptococcus or pneumococcus) found entrance to the system through the vaccination.

Assuming, then, as found by the industrial accident board, that the mastoiditis was caused by the invasion of the germs through the vaccination wound (though the testimony contained in the record seemed strongly to discredit this theory), there was still an absolute lack of evidence tending to show that the germ secured lodgment in the claimant's arm in the course of her employment. It seems quite clear to the court that the claimant failed to show any connection between her employment in the store of the respondent and the infection following the vaccination. There was nothing in her employment which made her more susceptible to the reception of the germ infection than if she were walking on the street or attending a theater or church. In other words, the risk of infection was such and such only as that to which the general public is exposed. The claimant's injury, if it could be traced to the vaccination, arose, not out of her employment with the respondent, but through the active agency of the Detroit board of health, which for the benefit of the claimant as well as for the benefit of the general public requested her to submit to the operation. The right of the board of health to insist on general vaccination was not involved. The claimant submitted to the operation, though, she asserted, under protest.

No Reason Why Chiropractor Should Be Excepted

(Williamson v. State (Ala.), 78 So. R. 308)

The Court of Appeals of Alabama, in affirming a conviction of defendant Williamson of the offense of treating diseases of human beings by the system of treatment known as "chiropractic," without having a certificate of qualification from the state board of medical examiners, says that, on the admitted facts, the court could well have directed a verdict for the state, and there was nothing in the record of which the defendant could complain. Since the ruling in *Bragg's Case*, 134 Ala. 170, 32 So. 767, the statutes have been amended so as to deny to all persons the privilege of engaging in the calling or profession of treating or offering to treat diseases of human beings by any system of treatment whatsoever who have not obtained a certificate of qualification from the state board of medical examiners. The authority of the board to issue certificates of qualification is not limited to those who desire to enter the profession as homeopathic doctors, but extends to all schools or systems of treatment. The chiropractor is not excluded or discriminated against, and has the same right to apply for a certificate of qualification as does the homeopath or osteopath, and, if granted a certificate of qualification, there is nothing in the law that denies him the right to pursue his method of treatment. The statutory provision concerning persons who propose to engage in the practice of treating disease as a profession and for a livelihood is a police regulation designed to protect the public from the ignorant and incompetent, and it is a matter clearly within legislative competence to prescribe a test by which qualification may be determined, and to confer authority on a designated board to conduct the proper examination through which the test may be applied. This the legislature has done. There being no discrimination against the defendant or his school of practice, there was no reason why he should be excepted from the operation of this police regulation.

Irresistible Impulse as a Defense to Crime

(Hankins v. State (Ark.), 201, S. W. R. 832)

The Supreme Court of Arkansas says, in this homicide case, that in *Bolling v. State*, 54 Ark. 588, 16 S. W. 658, it approved the rules in *McNaghten's Case*, 10 Clark & F. Reps. 199, namely:

> That to establish a defense on the ground of insanity it must be proved by a preponderance of the evidence that at the time of committing the act the accused was under such defect of reason, from disease of the mind, as not to know the nature and quality of the act that he was doing, or, if he did know it, that he did not know that he was doing wrong.
>
> That if the defendant labors under a partial delusion only, and is in other respects sane, he must be considered in the same situation as to responsibility as if the fact with respect to which the delusion exists were real.

But in approving these rules of McNaghten's Case the court did not hold that the doctrine of irresistible impulse caused by disease of the mind would not be a good defense in cases in which the evidence adduced warranted it.

The McNaghten rules were announced in answer to questions propounded by the House of Lords requesting the judges to declare the law of England as to "alleged crimes committed by persons afflicted with insane delusion, in respect of one or more particular subjects or persons." Thus the questions and the answers assumed as a fact that a person might be insane on "one or more particular subjects or persons." Although this idea had prevailed since the days of Sir Matthew Hale, and obtained in England when the McNaghten rules were announced, it now appears that some distinguished authors on medical jurisprudence have come to the conclusion, following the lead of Lords Lyndhurst and Brougham, that, as a scientific fact, it is impossible for a person to be "insane on one or more particular subjects or persons, without being insane on all." Hence they say the rules of McNaghten's Case are wrong and should be wholly ignored. Now it does not follow that the McNaghten rules are unsound even though there be no such thing as partial insanity. The doctrine that the mind is an integer, and, if unsound on one subject from disease, is unsound on all, was announced by Lords Lyndhurst and Brougham in civil cases concerning the capacity to make a will. This court has not approved the doctrine to that extent in civil cases.

The learned authors on medical jurisprudence and the very few courts which have adopted the views that in the trial of criminal cases in which the defense of insanity is set up the entire question of responsibility is to be left to the jury with no other instructions than that, if the act was the product of mental disease, they should acquit, otherwise convict, have been led into this egregious error, as this court takes it, by treating insanity and irresponsibility as if they were convertible terms. By so doing they treat the entire issue in criminal cases, when the defense of insanity is set up, as one of fact, whereas the real issue in such cases is a mixed one of law and fact. It is an issue of fact for the jury to determine whether the accused at the time of the alleged act was afflicted with a mental disease, and an issue of law as to whether the mental disease is such as will render him irresponsible. Therefore the issue of responsibility or irresponsibility in such cases should be submitted to the jury under proper instructions.

If the doctrine of the New Hampshire court that there are no legal rules or tests should be adopted throughout the American Union, it would be nothing short of a national calamity, because that innumerable multitude of mental abberants, commonly called cranks, would then find, over the insanity route, an easy path to immunity from any crimes they might commit. Hence the only safe and practical way of dealing with the subject is found in the legal tests or rules as formulated in McNaghten's Case, as far as they go, and by an addition thereto of the doctrine that irresistible impulse will excuse when caused by disease of the brain.

Impairment of Sight by Wood Alcohol an "Accident"

(Fidelity & Casualty Co. et al. v. Industrial Accident Commission et al. (Calif.), 171 Pac. R. 429)

The Supreme Court of California holds in a case in which a show card sign writer had been for about a year and a half in the habit of using dyes dissolved in wood alcohol and forced through a fine needle by air pressure, though ordinarily he used this appliance only a very small portion of the time, but during the holidays near the end of the period there was a very much greater use of the apparatus, and directly after the holidays, when the pressure of work had somewhat slackened, he used an extraordinary quantity of wood alcohol in cleaning the apparatus and in washing and cleaning his hands, and on January 7 his eyes and optic nerve were exposed to and came into contact with the vapor of wood alcohol in unusual quantity, involving the sudden impairment of his vision, that the injuries so received constituted an "accident" that arose out of and happened in the course of his employment, and were not the result of an occupational disease, within the meaning of the workmen's compensation act, which provided that, without regard to negligence, liability should exist against an employer for any personal injuries sustained by his employees by accident arising out of and in the course of the employment. The court says that many cases might be cited from other states having similar statutes and from England, in which like unforeseen, unexpected and unintended injuries to employees have been classed as "accidents" and held sufficient to justify awards, such as injuries sustained by persons while lifting heavy objects, or through exposure to drafts or chilly air, or icy water in mines, or through the rupture of blood vessels brought on by unusual heat or overexertion, or through the inhalation of poisonous gases, and the like.

Rule as to Privileged Communications Applied to Roentgenologist

(Shaw v. City of Nampa (Idaho), 171 Pac. R. 1132)

The Supreme Court of Idaho applies the rule as to privileged communications to a roentgenologist, in this personal injury case, under the following circumstances, as stated by the court: When the plaintiff was injured, she employed a physician who immediately took her to another town, where he employed a physician to take a roentgen-ray picture of her broken arm. After the picture was taken and developed, the second physician or roentgenologist consulted with the first or plaintiff's regular physician relative to the interpretation of the picture and the treatment to be administered. Counsel for the plaintiff objected to the roentgenologist's testifying as to any facts learned while he was thus employed, which objection the supreme court holds was properly sustained. It appeared from the evidence, the court goes on to say, that the roentgenologist did more than perform mere mechanical work as a photographer, and that he used his knowledge and experience as a physician in interpreting the meaning of the picture, and advised with the plaintiff's regular physician as to what treatment should be given, the plaintiff paying the roentgenologist for his services. The trial court was justified in excluding such evidence as privileged communication, under the Revised Codes of Idaho, Section 5958, Paragraph 4.

Society Proceedings

COMING MEETINGS

American Physiological Society, Baltimore, Dec. 30-Jan. 1.
Society of American Bacteriologists, Boston, Dec. 30-Jan. 1.
Southern Surgical Association, Baltimore, Dec. 17-19.
Western Surgical Association, Chicago, Dec. 20-21.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

Nov. 15, 1918, **24**, No. 4

1 Development of Seminal Vesicles in Man. E. M. Watson.—p. 395.
2 Early Morphogenesis of Human Thyroid. E. H. Norris.—p. 443.
3 Lymphatico-Venous Communications in Common Rat and Their Significance. T. T. Job.—p. 467.

Archives of Internal Medicine, Chicago

Nov. 15, 1918, **22**, No. 5

4 *Physiology of Stomach. Control of Hunger by Drugs. H. Ginsburg and I. Tumpowsky.—p. 554.
5 *Case of Paroxysmal Tachycardia Characterized by Unusual Control of Fast Rhythm. E. P. Carter and A. M. Wedd.—p. 571.
6 *Concentration of Urea in Human Blood. L. Kast and E. L. Wardell.—p. 581.
7 *Effect of Ethylhydrocuprein on Experimental Pneumococcus Infections of Rabbits. J. H. Lewis.—p. 593.
8 *Experimental Study of Serum Therapy in Trichinosis. M. C. Hall and M. Wigdor.—p. 601.
9 *Metabolism in Hemochromatosis. C. W. McClure.—p. 610.
10 Experimental Bacteremia. J. W. McMeans.—p. 617.
11 Primary Atrophy of Pallidal System of Corpus Striatum: Pathology of Paralysis Agitans. J. R. Hunt.—p. 647.

4. **Control of Hunger by Drugs.**—The authors report on the effects of various common drugs on the hunger contractions by the use of the balloon method. Atropin sulphate in doses from 1/80 to 1/40 grain hypodermically invariably inhibited contractions and counteracted the effect of pilocarpin and physostigmin in this regard. Pilocarpin, from 1/12 to 1/6 grain, hypodermically, augmented the contractions, accompanied by diminished pulse rate. Physostigmin produces stimulation, particularly by intravenous administration. Coincident with the gastric manifestations, the pulse rate fell as low as 50 beats per minute, and gradually returned to normal with abolition of the gastric effects. Profound inhibition occurs with doses of 1 c.c. of 0.5 per cent. solution of cocain per kilogram. A stimulating effect from camphor is observed only when the drug is administered intramuscularly. In large doses the contractions appear to become more frequent and intense, and the period of activity is prolonged.

As widely employed as strychnin is for its tonic value, there has been no experimental evidence for its supposed gastric effect. With doses of 1/90 to 1/60 grain subcutaneously, stomach tonus was increased, but at the same time the general excitability of the animal was increased so that the increased height of the writing level may have been due to the increased tonus of the abdominal muscles. At the same time, however, there appears to be a definite increase in the hunger contractions themselves. Inhalation of 5-minim pearls of amyl nitrite, often repeated, after short intervals, causes only a temporary inhibition which disappears as soon as the drug is removed from the nostril. Administration of epinephrin causes prompt and marked inhibition of the hunger contractions. Using ampules of ergot intravenously, a temporary inhibition usually followed by lowered tonus was noted, although contractions ensued. Intramuscular injection in one instance gave a tremendous steplike rise, with extremely high tonus level, followed by a short rest, and then another active period. The effect of pituitary preparations was remarkably like that of epinephrin.

5. **Paroxysmal Tachycardia.**—Carter and Wedd report a case of an ectopic rhythm originating in the upper level of the atrium near the pacemaker, conspicuously under the control of subjective inhibitory reflexes, but utterly uninfluenced by vagal stimulation. There was no demonstrable evidence of any accelerator influence or control over the tachycardia.

6. **Concentration of Urea in Human Blood.**—Of 244 hospital patients whose blood had a urea nitrogen concentration of less than 35 mg. per 100 c.c., 206, or 84 per cent., had a concentration of not more than 20 mg. per 100 c.c. Of these 206 cases only eighty-three, or 40 per cent., showed other evidence of renal impairment; but of the remaining thirty-eight cases, twenty-nine, or 77 per cent., showed other renal symptoms. Kast and Wardell conclude that 20 mg. per 100 c.c. may be taken as the upper normal limit of urea nitrogen in the blood of hospital patients, and that for diagnostic purposes the estimation of the blood urea is a satisfactory index of the functioning power of the kidney.

7. **Effect of Ethylhydrocuprein on Experimental Pneumococcus Infections.**—According to Lewis, ethylhydrocuprein can be given to rabbits intravenously and continuously over protracted lengths of time at the rate of 10 mg. per kilogram per hour, without apparent toxic effects. When injected intravenously into rabbits at the rate of 10 mg. per kilogram per hour for seven hours, ethylhydrocuprein produces a slight bactericidal action of the serum. A much higher bactericidal action is produced when it is injected at the rate of 15 mg. per kilogram per hour for seven hours. The effect of a fatal dose of pneumococcus on rabbits is not affected by the continuous intravenous injection of ethylhydrocuprein, in spite of the fact that the animal's blood may be distinctly bactericidal in vitro. The continuous intravenous injection of a soluble bactericidal therapeutic drug has theoretical advantages over the usual single or intermittent dosage. Lewis suggests that the failure of the method with ethylhydrocuprein is probably due to the nature of the drug and not to the method.

8. **Experimental Study of Therapy in Trichinosis.**—Hall and Wigdor carried out a number of experiments in testing the prophylactic and curative value of serum from animals recovered from trichinosis. Their experiments bear out the conclusions of Schwartz to the effect that serum from animals convalescent from trichinosis, when injected into other animals or fed to them mixed with trichinous meat, does not inhibit the customary development of trichinae. On the other hand, theoretic considerations, the clinical observations of Salzer, and the longevity data from their experiments lead Hall and Wigdor to the conclusion that such a serum may be of decided value in combating the toxic features of trichinosis, a conclusion which is in general agreement with Salzer's belief in the value of such a serum.

9. **Metabolism in Hemochromatosis.**—A retention of food iron was found by McClure in the metabolism experiment in a case of hemochromatosis. The hypothesis that there is an abnormal retention of iron in hemochromatosis is held to be consistent with the experimental findings. The basal metabolism and the respiratory quotient, determined by indirect calorimetry, were normal. These findings show that there was no gross disturbance in the intermediary metabolism.

Boston Medical and Surgical Journal

Nov. 21, 1918, **179**, No. 21

12 Art of Medicine. Oration Delivered at Harvard College Commencement in July, 1783. E. Eliot.—p. 638.
13 Delay in Surgical Treatment of Cancer. C. C. Simmons.—p. 639.
14 Ozone in Swimming Pool Purification. W. A. Manheimer.—p. 642.
15 *New Treatment for Paralysis Agitans. W. B. Swift.—p. 644.
16 Types of Men as Observed Among Recruits. J. M. Taylor.—p. 646.

15. **New Treatment for Paralysis Agitans.**—The method of treatment used by Swift consists in muscular movements of a simple nature gone through very slowly, at the rate of about 1 foot to the second, with strong mental concentration on the movement while it is in progress. First come movements of the right foot, then of the left, then of the legs successively, then of the right and left arms in order, then of both arms, and finally of the hands and fingers. The object is not muscular development but development of nervous control over the muscles. The movements should be regular and they should be prescribed definitely. No particular value need be attached to any special set of exercises, because the nervous control is the same in one as in another; however, all the exercises must be done very slowly, at the rate of about 1 foot of movement to the second, if any benefit is to result.

Three cases of definite improvement are mentioned by Swift to show what the method has actually accomplished. One patient complained of a very severe tremor and of great difficulty in getting to sleep at night. Six months of treatment reduced the tremor perceptibly and made it possible for her to get to sleep in fifteen minutes. After only three weeks of treatment a man overcame his tremor to such an extent that he could read his newspaper while holding it in his hands, a thing impossible to him before. A third patient, after three months of treatment, reported that her tremor was reduced by about one third.

Canadian Medical Association Journal, Toronto

November, 1918, **8**, No. 11

17 *Treatment of Infected Wounds Under Battle Conditions Arriving Late, Without Previous Surgical Treatment. G. W. Crile.—p. 961.
18 Meckel's Diverticulum-Cases Causing Intestinal Obstruction. R. Graham.—p. 966.
19 *Wounds of Chest; New Method of Treatment of Infected Hemothorax. W. Hutchinson.—p. 972.
20 Mouth Infection as Source of Systemic Disease. B. A. Murray.—p. 988.
21 "Preventive Medicine." F. H. Wetmore.—p. 993.
22 Terminal Disinfection. W. H. Hattie.—p. 1001.
23 Why Federal Legislation is Necessary in Order That Venereal Diseases May be Effectively Dealt With in Canada. P. H. Bryce.—p. 1005.
24 Advantages of Early Diagnosis and Treatment of Syphilis. G. O. Scott.—p. 1012.
25 Prevention of War Neuroses. T. H. Ames.—p. 1018.

17. **Treatment of Infected Wounds Under Battle Conditions.**—This is a report of a "group research" by the Lakeside Unit on the treatment of infected wounds at a base hospital during a battle. In this series, the patients were on the operating table for their first surgical treatment on an average of fifty-eight and one-third hours after injury, the shortest period being twenty-four hours, the longest 150 hours. Every wound that had not progressed to abscess and new tissue formation was treated by complete surgical revision. In large wounds, no attempt was made to excise *en bloc* within the line of uninfected tissue, but the devitalized tissue was dealt with in an opportunist manner. But little skin was excised. Ample exposure was always made, usually by vertical incisions.

After surgically meeting the indication for today, namely, complete revision, the "tomorrow" of the wound was considered, and certain cases were treated by incision of fascia overlying swollen muscles; incision of the skin and superficial fascia, placed where it seemed certain that within the first and second postoperative days swelling and tension would appear; that is, the operation that was anticipated as being necessary day after tomorrow was done now, but owing to these anticipatory or prophylactic incisions, little or no swelling occurred later. When completed, the wound was flat and soft and anticipatory; the obstacles to its biologic defense had been removed. When the wound was surgically completed, it contained many bacteria. It was in the state of a heightened defense clinically. There was active phagocytosis and increased blood supply everywhere; and the infecting bacteria had not gained virulence by selective struggle against antiseptics.

In the period there were admitted, 1,274 patients. Of these, 660 were walkers, and 614 were stretchers. Of the 614 stretcher cases, 194 required no operation, because they were medical cases, or because the wounds were taking care of themselves, and 420 required operation. Of the 420 operative cases, sixty-seven were marked for delayed primary suture; forty-four superficial wounds were immediately sutured. Of the forty-four immediate sutures, all were successful; of the successful cases, there were two fractured humeri and one fractured radius. Of the sixty-seven delayed primary sutures, 91 per cent. healed without requiring removal of any stitches; 6.1 per cent. were partial successes; 2.9 per cent. were failures. Among the total number, ninety-three were compound fractures. There were four, or 0.9 per cent., deaths. There was no case of bacteremia or septicemia. No case was rejected for operation because it was thought that the infection had gone too far. The patients not suitable for delayed suture were quickly ready for evacuation.

The results from this work show that surgical revision of wounds untreated for fifty-eight and one-third hours causes no harm and does much good. It is felt that with further experience a greater percentage of delayed infected wounds, including compound fractures, will be closed both primarily and delayed. The presence or the absence of chemical antiseptics (flavine, Wright's hypertonic pack, alcohol, dichloramin-T, chlorcosane) made no notable impression on the clinical course after operation. Crile says that these results are a tribute to the judgment of the surgeons in the forward area who selected the cases for evacuation without operation and who elected not to pack gauze nor insert drainage tubes into these wounds, but merely dressed them.

19. **Treatment of Infected Hemothorax.**—Impressed by the great improvement in the results obtained by the cleaning out and closing of knee joints which had become infected by wounds, over the results obtained by the old method of drainage, Hutchinson applied this principle to the treatment of infected hemothorax. The method applied is as follows: As soon as the hemothorax is found to be infected, clinically and bacteriologically (nor merely bacteriologically), the patient is taken to the operating room and placed in a partially sitting position on the table. He is then turned a little toward the good side so that the post axillary line is brought well into view. The best anesthetic to use in these cases, Hutchinson says, is nitrous oxid and oxygen. If the patient is in a very bad condition, Hutchinson uses a local anesthetic up to the time of resecting the rib and then a general anesthetic. Chloroform and ether should never be administered. A portion of rib, long enough to allow the hand to be passed through the opening, should be removed and the blood allowed to flow out. The clot is then removed by the hand, all parts of the cavity explored and light adhesions broken down. Then by means of large pieces of gauze on dressing forceps, the remainder of blood and clot is removed. After this, the cavity is washed out with saline and again mopped out and a running suture inserted in such a way as to include the pleura and intercostal muscles. This suture should be left quite loose so that a small quantity of some antiseptic can be poured into the pleural cavity. This antiseptic should be spread all over the walls of the cavity by means of a small piece of gauze on long dressing forceps. As soon as this has been done, the running suture is drawn tight, thus closing the pleural cavity completely. The muscles and skin are then closed and a dry dressing applied.

Forty-eight hours after the operation, the chest should be aspirated, thus removing a quantity of serum and air. Three or four aspirations are necessary during the course of convalescence. The antiseptics Hutchinson used in these cases include eusol solution, a suspension of bipp in liquid paraffin in the following proportions, bipp one-half ounce, liquid petrolatum 6 ounces, flavine solution 1:5,000, and physiologic sodium chlorid solution, the amount left in the chest being 3 ounces. Of twenty-nine cases treated in this manner, sixteen remained closed, thirteen reopened. The bipp gave the best results.

Iowa State Medical Society Journal, Des Moines

Nov. 15, 1918, 8, No. 11

26 Relationship of Respiratory Infection to Digestive Disturbances in Infants and Children. A. H. Byfield.—p. 385.
27 Pellagra in Iowa—With Case Reports. F. A. Ely.—p. 388.
28 Importance of Sanitation in Zone Immediately Surrounding the City. F. A. Steelsmith.—p. 392.
29 Fracture of Hyoid Bone. W. W. Pearson.—p. 395.

Journal of Immunology, Baltimore

July, 1918, 3, No. 4

30 *Immunizing Properties of Bacterial Vaccines Prepared After Various Methods. M. W. Perry and J. A. Kolmer.—p. 247.
31 *Bactericidal Action of Whole Blood, New Technic for Its Determination. G. D. Heist, S. Solis-Cohen and M. Solis-Cohen.—p. 261.
32 Complement Fixation with Protein Substances. R. L. Kahn and A. McNeil.—p. 277.
33 *Relation Between Proteolysins and Hemolysins. A. McNeil and R. L. Kahn.—p. 295.
34 *Influence of Arsphenamin and Mercuric Chlorid on Complement and Antibody Production. I. Toyama and J. A. Kolmer.—p. 301.

30. **Immunizing Properties of Bacterial Vaccines.**—All vaccines of *B. typhosus* prepared in various ways and including living, autolyzed, chemical and heat-killed and alcohol-killed sensitized sediment, usually produced slight leukocytosis and slight increase of temperature when administered to rabbits by subcutaneous injection in doses according to body weight and comparable to those given to persons; the alcohol-killed sensitized sediment produced these nonspecific reactions in highest degree. Agglutinin and complement fixing antibodies were produced in highest degree by the administration of living and autolyzed vaccines followed in order by the mercurophen-killed, tricresol-killed, heat-killed and alcohol-killed sensitized sediment vaccines. While the agglutination and complement fixation reactions showed in some instances a tendency toward specificity on the part of these antibodies for the particular antigen (vaccine) of *B. typhosus* responsible for their production, the results generally do not indicate definitely the development of specificity to this degree. An antigen of *B. typhosus*, prepared by cultivating the microorganism in plain neutral broth for forty-eight hours and sterilizing the culture with 0.1 per cent. of commercial (40 per cent.) aqueous solution of liquor formaldehydi in a cold dark place over a period of four to five days, proved of particular value in macroscopic agglutination tests. The various vaccines of *B. typhosus* which Perry and Kolmer used as antigens in the complement fixation tests may be arranged as follows in order of antigenic sensitiveness: living and autolyzed; mercurophen-killed; tricresol-killed; alcohol-killed sensitized sediment and heat-killed.

31. **Bactericidal Action of Whole Blood.**—If small numbers of living pneumococci are seeded, by a suitable method, in pigeon's blood before it coagulates, the pneumococci fail to multiply. On the contrary, if pneumococci are seeded in mouse's or rabbit's blood before it coagulates the pneumococci grow with great vigor. The evidence points to the presence in the uncoagulated blood of the pigeon of a bactericidal factor which is absent from the blood of the mouse or rabbit. Fresh defibrinated blood of both immune and susceptible species is an excellent culture medium for the pneumococcus, which shows that the bactericidal factor disappears during the process of coagulation. Pneumococci fail to multiply in the blood of a rabbit which has been suitably inoculated with killed pneumococci, the reaction being specific to type. The blood of a man who has recovered from lobar pneumonia prevents the growth of pneumococci belonging to the type which caused his disease. The globoid bodies of poliomyelitis grow readily in uncoagulated human blood. They fail to grow when seeded in uncoagulated rabbit blood. Many of the nonpathogenic bacteria usually met with as contaminations in bacteriologic work, as, for instance, *B. subtilis*, fail to grow when seeded in uncoagulated blood. The tentative hypothesis advanced by the authors to cover the facts observed by them is that when small numbers of bacteria are seeded in blood before it has had time to coagulate only those bacteria grow and multiply which are pathogenic for the animal from which the blood is taken.

33. **Relation Between Proteolysins and Hemolysins.**—An attempt was made by McNeil and Kahn to find whether proteolytic substances are produced in rabbits on protein injections, if a procedure simulating the production of hemolytic substances in these animals be resorted to. Proteolysis was determined by observing the increase in amino-acid nitrogen after digesting mixtures of the immune serum, the specific protein and complement for a given period. The results gave no evidence of any increase in amino-acids under these conditions, which would indicate that hemolysis and proteolysis are probably two distinct phenomena.

34. **Influencing Complement and Antibody Production.**—The general result of the experiments made by Toyama and Kolmer indicates that while massive doses of arsphenamin and mercuric chlorid tend to suppress antibody production and cause a decrease in hemolytic complement, smaller doses tend to increase the production of antibody (agglutinins)

and augment the complement content after a primary decrease. The authors suggest that it is probable that both drugs administered in the treatment of syphilis owe part of their therapeutic efficacy to their influence on increasing antibody production and complement.

Journal of Medical Research, Boston

September, 1918, **39**, No. 1

35 *Immunity and Tissue Transplantation. Influence of Immune Serum on Reactions About Transplanted Tissues. M. S. Fleisher.—p. 1.
36 Benzidine as a Peroxidase Reagent for Blood Smears and Tissues. G. S. Graham.—p. 15.
37 *New Indicator for Direct Reading of Hydrogen Ion Concentration in Growing Bacterial Cultures. J. Bronfenbrenner.—p. 25.
38 Methods of Isolation and Identification of Members of Colon-Typhoid Group of Bacteria. Late Fermentation of Lactose. J. Bronfenbrenner and C. R. Davis.—p. 33.
39 *Syngenesioplastic Transplantation of Thyroid in Guinea-Pig. L. Loeb.—p. 39.
40 *Bacteriology of Tuberculous Kidneys. L. H. Spooner.—p. 59.
41 *Multiple Transplantations of Thyroid and the Lymphocytic Reaction. L. Loeb.—p. 71.
42 *Increased Susceptibility of Roentgenized Guinea-Pigs to Inoculation with Tubercle Bacilli. E. Kellert.—p. 93.
43 *Properties of Pneumotoxin and Its Probable Function in Pathology of Lobar Pneumonia. C. Weiss.—p. 103.
44 Pigmentation of Nerve Cells. Nonfatty, Melanotic Pigment in *Dog and Rabbit Produced by Chronic Depression.* D. H. Dolley and F. V. Guthrie.—p. 123.

35. **Immunity and Tissue Transplantation.**—A series of experiments was carried out by Fleisher in which the influence of the immune serum on regeneration, leukocytic and connective tissue reaction was studied. Pieces of guinea-pig kidney were transplanted into the subcutaneous tissue of the abdomen of animals, and removed and studied at various periods. At least four pieces of kidney were examined at one, two, four, five, seven, ten, twelve and fourteen days after transplantation; in many cases a very much larger number of pieces was examined. It was noted that in passively immunized animals about homoiotransplants the same reactions occur as in normal animals; about heterotransplants there is possibly a slower clearing of the peripheral portion of the tissue of leukocytes, but otherwise the reactions, even the leukocytic reactions, are like those in normal animals. When tissue is brought into contact with immune serum for a short time before transplantation, there is possibly a slight and brief slowing of connective tissue reaction and regeneration in homoiotransplants. In heterotransplants there is interference with regeneration, which is, however, probably due to the interval elapsing between removal from the living animal and transplantation into the host, and also a slower invasion by leukocytes.

The results of these experiments would suggest that substances in the body fluids of immunized animals have but little influence on the regeneration of transplanted tissue, and that the slowing of leukocytic invasion is in large part due to an action of the serum. The results further suggest that the more marked leukocytic reaction seen about transplants in either immune heterologous animals or immune homologous animals is a direct and independent manifestation of the immunity to the tissue. If these conclusions be correct it appears that, in immunity to tissue transplantation, tissue reactions and especially the reactions of leukocytes play a more important part than do the reactions called forth or produced by the body fluids.

37. **Reading of Hydrogen-Ion Concentration in Bacterial Cultures.**—Bronfenbrenner and Davis use a mixture of equal parts of 0.5 per cent. watery solution of China blue with 1 per cent. solution of rosolic acid in 95 per cent. alcohol. They call it "CR." CR can be added directly to mediums, and permits easy, direct estimation of hydrogen-ion concentration in the culture at all times. Its colors on both sides of neutrality are very brilliant, and therefore a very small amount of indicator is sufficient to give to the medium the desired intensity of color. Bronfenbrenner and Davis keep the indicator in a concentrated solution and add 1 c.c. of this stock solution to each 100 c.c. of medium before sterilization. Heating does not affect this indicator. While the indicator solution keeps sterile on account of alcohol it contains, the heating in sterilization drives it off. Even in the concentration twenty-five times that in which it is present in the medium, CR indicator shows no trace of bactericidal action.

39. **Syngenesioplastic Transplantation.**—The transplantation into early related individuals of the same species is termed syngenesioplastic transplantation by Loeb, a term analogous to those used in the case of transplantation into the same animal, into other individuals of the same species and into different species. He transplanted the thyroid in guinea-pigs from mother to children, from sister and brother to sister or brother, and in one case from child to mother. He followed the fate of the transplanted tissues during different periods after transplantation. After syngenesioplastic transplantation of thyroid in guinea-pigs, the results obtained are intermediate between those obtained after autotransplantation and homoiotransplantation. These findings agree with previous results obtained in the rat and with different organs. After syngenesioplastic transplantation, the thyroid behaves in the majority of cases, for a certain period of time, like an autotransplanted tissue, but in most cases gradually an intense lymphocytic infiltration takes place which secondarily destroys the healthy acini. These experiments are a further proof of the rôle of the lymphocytes in the destruction of tissues under the influence of syngenesiotoxins and homoiotoxins.

In a smaller number of cases of syngenesioplastic transplantations, the fibrous tissue also is increased, the fibroblasts behaving similar to the fibroblasts in cases of homoioplastic transplantation. While in these latter cases the lymphocytic infiltration may be relatively diminished in intensity, the acini are usually not so well preserved as a result of pressure by fibrous tissue. The rapidity with which the transplants attract lymphocytes in various kinds of transplantations is graded, and these gradations correspond to the gradations in the relationships between cell proteins and constituents of the body fluids in donor and host.

40. **Bacteriology of Tuberculous Kidneys.**—The positive proof of the existence or nonexistence of mixed infection in tuberculous processes can be obtained only by a careful bacteriologic examination of such lesions. Inasmuch as a study of pulmonary processes is unsatisfactory, for obvious reasons, Spooner selected the kidney. Eleven tuberculous kidneys were examined. One of these contained a deep sinus, and was secondarily infected. This was excluded from the statistics. In the remaining ten, positive cultures of the tubercle bacillus were obtained in five. There was no growth on any medium in the remaining five, and none on plain and anaerobic mediums in the five positive cases after a period of three months.

In five, or 50 per cent., a pure growth of the tubercle bacillus was obtained. In no case was any organism of secondary infection recovered. In only two cultures was any other growth found. Such growth was always found in a great minority of the cultures examined. Two kidneys, although probably actively tuberculous consisted merely of large pockets of pus and caseous tissue. For this reason the tubercle bacillus could not be recovered. "Pus sacs," referred to in literature for years as evidences of mixed infection, were sterile, without exception.

Tissue implantations yielded positive results in 66 per cent. of the positive cultures; pus in 33 per cent. The growth of the organism in every case was evident in two to five weeks after the original inoculation. In every instance coverglass preparations showed typical acid-fast bacilli.

Cultures from seven urines of patients suffering from tuberculosis of the kidney were examined. In three instances the urine obtained by catheter from the bladder showed growth of organisms other than the tubercle bacillus. In two cases no growth could be obtained. In four cases the urine obtained from the ureter on the infected side showed no growth on ordinary culture mediums after forty-eight hours' incubation. In all of these cases, pus was present in the urine, and tubercle bacilli were demonstrated in smears. Hence Spooner concludes that the urine of tuberculous kidneys, obtained from the ureter, like the tissues of these kidneys, shows no evidence of mixed infection. The bladder urine is often contaminated by other organisms, yet the ureter specimens remain sterile on plain mediums. The clinical diagnosis of renal tuberculosis is suggested by the presence of acid-fast bacilli in the urine. If a pus-containing urine, obtained from the ureter, shows no growth on simple culture mediums after forty-eight hours' incubation, another and very important link is added to the chain of diagnosis of tuberculosis of the kidney.

41. **Multiple Transplantations of the Thyroid.**—Loeb says that in multiple transplantations of the thyroid the individuality differentials of the thyroids of different animals are preserved; they may find expression in a reaction of the host towards the transplant, which is similar in the case of lobes derived from the same animals and differs in the case of lobes derived from different animals. The lymphocytic reaction in the second transplant is not markedly accelerated or intensified over control transplants, even in cases in which the first transplantation had been multiple; this is especially noticeable in experiments in which the second transplant had remained in the host during a period of three or four days. In a considerable number of cases of multiple transplantation, the first transplants were found to a great extent, or completely, destroyed. It is at present uncertain to what extent this is due to unfavorable conditions of a more or less accidental character or to the production of immune substances.

Loeb's results make it very probable that the lymphocytic reaction is, in part, at least, a response of the host to primary homoiotoxins (syngenesiotoxins) and that it is not entirely the result of the development of immune substances. It is probable that the cell constituent which, directly or indirectly, gives rise to the original formation of homoiotoxins (syngenesiotoxins), may also act as antigen and call forth the production of immune substances which, after combination with the antigen, act on the host cells in a way similar to the primary homoiotoxins (syngenesiotoxins).

42. **Increased Susceptibility of Roentgenized Guinea-Pigs to Tubercle Bacillus Inoculation.**—The technic used by Kellert was: 5 milliamperes; time, 10 minutes; spark gap, 7 to 8.5 inches. A Wappler generator and Coolidge tube having a moderately sharp focus were used. The bottom of the box containing the animal was placed at a distance of twelve inches from the center of the target. A thin wood cover closed the box. The animals were injected with tubercle bacilli either intraperitoneally or subcutaneously, and for each radiated animal a nonrayed one was provided as a control. Exposures were made on the day of inoculation or the following day. After exposure the radiated animal and control were kept in the same cage under similar conditions Kellert found that radiated guinea-pigs are rendered more susceptible to contaminating and to secondary infection, and that the method is of no practical value in routine diagnosis and is unreliable unless carefully controlled by the use of the accepted methods which have become standard in laboratory practice.

43. **Properties of Pneumotoxin.**—Concerning the share of pneumotoxin in the pathology of lobar pneumonia, Weiss suggests that prolonged chilling of the body due to exposure initiates the continuous liberation of large quantities of toxin by the action of normal body enzymes on pneumococci normally localized in the lung alveoli and that this accounts for the initial toxemia. The formation of the exudate is considered to be in part due to an increased permeability of the endothelial cells of the lung for various serum albumins, globulins, fibrinogen and enzymes as the result of the injury exerted by the toxin on their cement substance. The toxin is also regarded as a lymphagogue. It hinders the autolysis of the exudate and the favorable action of antipneumococcus-immune bodies and thus aids in the formation of toxic proteoses and peptones. With the production of excess amounts of specific antibodies and of bactericidal and phagocytic substances, the deleterious and autolysis-inhibiting influences of the toxins and proteoses are neutralized. Autolysis of the exudate is now unhindered and the products are nontoxic amino acids. The equilibrium of this system being governed by the laws of mass action, the change from febrile toxemia to the afebrile atoxic state is necessarily an abrupt one—crisis. Hemoptysis and icterus in pneumonia are regarded as partly or entirely the result of the hemolytic activity of pneumotoxin.

Medical Record, New York

Nov. 23, 1918, **91**, No. 21

45 Psychoneuroses of the War. H. Wakefield.—p. 881.
46 Tonic Spasm as a Cause of Disability, and the Remedy. J. M. Taylor.—p. 891.
47 Gingival Septicopyemia. W. F. Dutton.—p. 893.
48 Nature of Cancer, with Special Reference to Uterine Disease. H. Crutcher.—p. 895.
49 Chronic Obscure Fever in Children. J. Epstein.—p. 897.
50 Occupation for Tuberculous Patients. M. Kahn.—p. 899.

Modern Hospital, Chicago

November, 1918, **11**, No. 5

51 At the Sign of the Blue Cross. C. W. Forward and G. F. Lees.—p. 349.
52 Educational Work for Children at Lakeside Hospital. A. R. Warner, Cleveland.—p. 354.
53 Extending the Influence of a Hospital: Teaching of Diagnosis by Means of Case Records. F. M. Painter.—p. 355.
54 Institutions for the Care of Epileptics. W. T. Shanahan.—p. 364.
55 Hospital Accounting. C. A. Porter and H. K. Carter.—p. 371.
56 Bahama General Hospital and Asylum. T. Milne.—p. 376.
57 New Four-Patient Cottage at Barlow Sanatorium. W. C. Klotz.—p. 378.
58 A Practical Remedy for Hospitalization. M. T. McEachern.—p. 379.
59 Relation of Laboratories to Hospitals. W. C. MacCarty.—p. 381.

Nebraska State Medical Journal, Norfolk

November, 1918, **3**, No. 11

60 Indications for and Results of Use of Metal Bone Plates, Bone Graft, and Conservative Methods in Treatment of Fractures. A. F. Jonas.—p. 329.
61 Complemental Jejunostomy. A. I. MacKinnon.—p. 335.
62 Results of Tonsillectomy. L. B. Bushman.—p. 338.
63 Infantile Scurvy. W. O. Colburn.—p. 340.
64 Sidelights on Carcinoma. O. C. Morrison.—p. 342.
65 Thrombosis and Embolism of Mesenteric Vessels. B. B. Davis.—p. 345.

New York Medical Journal

Nov. 23, 1918, **108**, No. 21

66 Nasal Complications of Epidemic Influenza. G. W. MacKenzie.—p. 885.
67 Surgical Pathology of Epidemic Influenza. J. W. Kennedy.—p. 887.
68 Influenza in U. S. Marine Hospital. Z. I. Sabshin.—p. 888.
69 Prophylaxis of Influenza. B. Frankel.—p. 894.
70 Influenza and Suprarenal Glands. J. H. M. A. Von Tiling.—p. 895.
71 Danger of Mask for Protection Against Influenza. J. C. Minor.—p. 895.
72 *A Wassermann Modification. M. Shaweker.—p. 896.
73 Three Cases of Eye Injury. D. Roy.—p. 898.
74 Phenol in Tetanus. D. Delfino.—p. 900.
75 Wounds and Shell Shock and Their Cure. F. B. Turck.—p. 901.

72. **A Wassermann Modification.**—Besides the diluents, only three reagents are used by Shaweker, namely, patient's serum, which must be fresh; acetone insoluble antigen, and guinea-pig cell suspension. The patient's serum serves the triple capacity of complement, amboceptor and reagent. Antigen is made after the method of Noguchi and used in strength of one fourth of the anticomplementary unit. When active serum is used, the acetone-insoluble antigen must be used to reduce the chances of false prototrophic fixation. The cells are collected by cardiac puncture of an anesthetized guinea-pig. The blood is citrated and given two or more subsequent washings with normal salt solution. Natural agglutinins have not been observed. The patient's serum is used in doses of 0.1 c.c. to each tube and should be fresh, free from cells, and not hemolyzed. In testing a spinal fluid, 0.1 c.c. of a known negative serum must be used to furnish complement and amboceptor. The titrations required in this modification are to determine the anticomplementary unit of the antigen used and the cell load which can conveniently be handled by the 0.1 c.c. of patient's serum used. The icebox fixation is used for the first step, four hours to over night being the time allowed. One or two shakings of tubes is sufficient.

Wisconsin Medical Journal, Milwaukee

November, 1918, 17, No. 6

76 Cardiac Disturbances from Standpoint of Military Service. J. S. Evans.—p. 213.
77 Health Insurance. J. R. Commons.—p. 218.
78 Further Objections to Compulsory Health Insurance. E. H. Ochsner.—p. 224.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal

Nov. 2, 1918, 2, No. 3018

1 *Purulent Bronchitis Complicating Measles and Rubella. W. M. MacDonald, T. R. Ritchie, J. C. Fox and P. B. White.—p. 481.
2 Differential Diagnosis of Scarlet Fever, Measles and Rubella. J. S. Warrack.—p. 486.
3 *Incubation Period of Influenza. P. MacDonald and J. C. Lyth. —p. 488.

1. **Purulent Bronchitis Complicating Measles and Rubella.** —An epidemic of exanthematous disease (418 cases) complicated by purulent infection of the bronchi attacked several hundred men. In the large majority there was a copious frothy or mucopurulent bronchorrhea, in seventy-five there was a severe purulent bronchitis, and of these twenty-six died. Taking into consideration only the definite cases of septicemic bronchitis the mortality amounted to one third of the men attacked, but, as practically all the cases showed signs of a much more severe bronchial catarrh than ordinarily occurs in measles, and as the sputa in these cases contained the same organisms as in the more severe ones, the authors believe that it is reasonable to regard them all as cases of multiple infection, and, by doing so, to reduce the mortality to about 7 per cent. Bronchitis with purulent expectoration was common to all the cases, but the severe type consisted rather of a septicemia accompanied by various lung lesions which were not constant but ranged from bronchial catarrh to bronchopneumonia, pleurisy, basal congestion, or lobar pneumonia. No one of these types prevailed, but the seriously ill patients who survived long enough passed through all these phases in succession, although patients usually died before definite lobar pneumonia was well established.

The most striking feature of the physical examination in the early stages was the absence of signs suggesting a marked or extensive involvement of the lung tissue in patients who presented all the clinical features of a severe pneumonia. In the mild cases the breath sounds were harsh and were accompanied by some sharp or sonorous rhonchi and by a few medium crepitations at the base of the lungs. In the more severe cases the signs of bronchitis were more marked and passed into those of bronchopneumonia with patches of dulness on the posterior aspect, deficient or, less frequently, bronchovesicular breathing, and usually some pleural friction. Signs of pleural effusion were rare and empyema never supervened. Evidence of consolidation (at one or both bases, more often the right, and occasionally at one apex) was present in most of the fatal cases for a day or two before death, but in some these signs were absent or very slightly marked. Toward the end coarse bubbling râles could be heard all over both lungs.

The use of drugs was confined to symptomatic treatment in the way of combating the great strain placed on the heart, oxygenating the lungs, and so aiding the reduced area of normal lung tissue in its functions, helping the drainage of the pus from the lungs by expectoration, and hindering the growth of pyogenic organisms in the lungs by local applications. For this purpose heart stimulants such as brandy, strychnin, and digitalis, ammonium carbonate, oxygen warmed and alcoholized, stimulant expectorants, and antiseptic inhalations were tried.

Three different vaccines were used; no one of these three included all the organisms which appear to be responsible for the clinical symptoms. A. A mixed stock vaccine, consisting of 1,250 million Pfeiffer's bacillus and 250 million Friedländer's bacillus per cubic centimeter. B. A vaccine consisting of two preparations containing (*a*) *Streptococcus lanceolatus* and (*b*) *Streptococcus pyogenes-longus*. C. A. vaccine consisting of two preparations, containing (*a*) *Staphylococcus aureus* and (*b*) pneumococcus, a streptococcus and a gram-negative bacillus. Vaccine A was given always in doses of 300 million Pfeiffer's and 60 million Friedländer's with an interval of four days before a second dose. There was never any untoward reaction. Vaccine B was given in most cases in doses of 25 million *Streptococcus lanceolatus* and 25 million *Streptococcus pyogenes*, though in a few the dose was increased to 125 million *Streptococcus lanceolatus* and 33 million *Streptococcus pyogenes*. No untoward results were experienced from these doses.

Of 36 patients treated with vaccine, 10 died. Of 25 patients untreated with vaccine, 16 died. Of 20 patients treated with Vaccine A alone, 3 died. Of 6 patients treated with Vaccine B alone, 4 died. Of 7 patients treated with Vaccines A and B, 2 died. The good results of the vaccine were seen in an improved general condition rather than in the rapid subsidence of any special symptoms.

3. **Incubation Period of Influenza.**—Citing their own cases, the authors claim that the incubation period for both was forty-one hours.

Lancet, London

Nov. 2, 1918, 2, No. 18

4 Spirochetosis Icterohemorrhagica. B. Dawson.—p. 575.
5 Doctrine of Consumption in Harvey's Time and Today. P. Kidd. —p. 582.
6 *Pyemia Due to Organisms of B. Coli Group. J. I. Enright and P. H. Bahr.—p. 585.
7 Small Localized Epidemic of Influenza in Hospital Ward. M. G. Foster and H. A. Cookson.—p. 588.

6. **Pyemia Due to Organisms of B. Coli Group.**—Cases of a pecular pyemia, with special involvement of the kidneys, apparently caused by *B. coli* or one of its congeners, have been observed during the last year in Cairo. It was some time before the puzzling pyrexia with its attendant symptoms was recognized as a specific one. Nine cases in all were diagnosed in life, six others were recognized pathologically postmortem. In all but three of the cases which came to necropsy a dysenteric ulceration of the large intestine, and especially of the rectum, was present in all degrees of superficial necrosis and deep ulceration. Out of the six patients under treatment, three gave no history of a chronic diarrhea or dysentery; the remainder had had many such attacks.

The authors surmise that the organisms originally gained entrance to the blood stream through a breach of the mucosal surface in the lower part of the large intestine. The pyemic attack is usually ushered in by severe frontal headache, anorexia, vomiting, and an acute pain localized to one or both kidney regions. This pain radiates along the inguinal canal and terminates in the penis, or may be localized to the scrotum. Blood is often passed in the urine in the initial stages. There is generally some difficulty in micturition, though there may be at the same time no frequency or alteration in amount of urine. There may be no symptoms of vesical trouble whatsoever. Usually the patient looks extremely ill, and is mentally dull; he sweats profusely. The temperature is invariably high (103-104 F.), the pulse weak and rapid (110 or higher). At the outset there is invariably a severe rigor which lasts about ten minutes. The temperature remains elevated for five days and then takes on an undulating and a remittent character. All the urgent symptoms disappear; after a few days of convalescence the patient is able to resume his duties.

After a further seven to fourteen days the temperature suddenly shoots up and is followed by a rigor and vomiting; the former succession of symptoms is repeated seriatim. These relapses, averaging five days, alternating with apyrexial periods of eight to fourteen days, recur with remarkable regularity. The patient grows weaker and progressively more emaciated. Finally he dies of toxemia, it may be with ascites and a profuse diarrhea with fecal incontinence. At this stage the liver and spleen are definitely enlarged.

In cases which progress favorably under treatment the pyrexial cycles continue but diminish in intensity, and the apyrexial periods become gradually more prolonged, as long as five weeks. Such patients rapidly put on flesh, and after a convalescence of three months, during which there is no elevation of temperature, were discharged from hospital. Among diseases most closely resembling it are malaria, undulant and relapsing fevers. In its early stages dysentery, generalized tuberculosis, phlebotomus fever, or one of the enteric group may be suspected.

Practitioner, London

November, 1918, **101**, No. 5

8 Symptoms Which Precede and are Associated with General Arteriosclerosis. O. K. Williamson.—p. 241.
9 Clinical Value of Minimum Blood-Pressure Records. L. T. Thorne.—p. 260.
10 *Relation of Blood-Pressure to Psycho-Neuroses. P. Bousfield.—p. 266.
11 *National Medical Service. W. A. Brend.—p. 271.
12 Recent Work of Anesthetics. J. Blomfield.—p. 279.
13 Scurvy (Concluded). H. V. O'Shea.—p. 283.
14 *Ergot and the Prostate. O. Y. Murphy.—p. 291.
15 Pseudo-Acute Abdomen with Temporary Increase of Arterial Tension. W. B. Cosens.—p. 293.

10. **Blood Pressure and Psychoneuroses.**—Observation has convinced Bousfield that the blood pressure is not only of some value in the differential diagnosis of the psychoneuroses, but that it is also of considerable importance in their treatment. In a pure neurasthenia, unless complicated by organic disease, the blood pressure is usually subnormal. In a conversion hysteria, it is generally normal; in an anxiety-neurosis, it is more often than not considerably above the normal. Bousfield believes that the headache in the anxiety neurosis is caused very often or exaggerated by the slight raising of the blood pressure. By lowering the blood pressure, and thus relieving one of the most distressful symptoms, improvement of the general condition by psychotherapeutic methods takes place more rapidly.

In instances in which a patient can only be seen for about one hour during the week, Bousfield nearly always gives one one-hundredth grain of nitroglycerin nightly for a week, followed, perhaps, by half that dose during the next week. In neurasthenia, improvement follows raising the blood pressure. In such patients, and this seems of some slight value, courses of treatment were either suggestive or psycho-analytic. An interesting fact elucidated by Bousfield during his investigation was that those who suffered from great sweating were, as a rule, those in whom the blood pressure was not relieved so readily by nitroglycerin.

11. **National Medical Service.**—The various schemes for national medical service proposed by different English medical men are criticized by Brend in an analytical way. He says that the general point which it is sought to make is that, owing to the great variety and conditions from locality to locality, anything in the nature of a centralized uniform medical service is impracticable. It is impossible to conceive of satisfactory results following from a service which lays down the same requirements for a rural district and a crowded industrial area. An essential qualification for success is a wide degree of elasticity in accordance with local circumstances. It is submitted, therefore, that the best prospects of increasing the usefulness of the general practitioner to the community will be afforded by dismissing the idea of a national medical service, and considering instead the idea of local medical services, which shall vary according to the needs and type of each locality.

In order that this scheme might be realized, it would be necessary in every district to establish a local authority on which the practitioners of the district would be represented widely. This need not necessarily be a new authority; it might, for example, be simply a subcommittee of the present sanitary authority, to which practitioners were added. But it should be understood that the doctors were not members of this authority simply for the purpose of protecting their own interests but were to be regarded as actually responsible, along with the rest of the committee, in establishing an adequate medical service in their district. The authorities then have an entirely free hand to survey its needs and provide for them accordingly. In some districts, as already pointed out, the practitioners would probably concur in a whole-time salaried service being formed; in others, it would be realized that the great bulk of the work was already done by private practice and there was no need to interfere with this, but that it was necessary to supplement it in various directions. Again there would be freedom to make the additional provision either by the appointment of a certain number of whole-time men or of part-time men, or by payment of private practitioners by a capitation fee.

Whatever scheme is adopted, the consequent legislative changes will be very extensive; and in a position where any course is fraught with difficulties, and where weighty arguments can be brought forward against any proposal, it is Brend's opinion that the minimum of difficulty and the best prospect of success will be attained by permitting a very high degree of local autonomy in this matter.

The war undoubtedly has raised the status of the doctor. It has now been made clear to all that the medical profession must be regarded as an integral part of the national defense against aggression by foreign foe. Professional men of all types—lawyers, merchants, architects, teachers—have all worthily contributed their share as men; the padre and the doctor alone have been called on to play their parts still in their professional capacities. Nor is this change limited to increased recognition of his importance; the actual value of the doctor as a curer of sickness has been substantially increased. Where formerly it may have been that his weekly medical journals accumulated unopened in his consulting room; now, at the mess, in hospital, or in the field, he has been associated with his colleagues, some perhaps high up in the scale of medical eminence, and he has had opportunities of hearing all forms of treatment discussed and has seen new developments of medicine put into practical application. There must be very few men who have not realized that, purely from the point of view of adding to their medical knowledge, they have benefited substantially by their experience in the army medical corps.

14. **Ergot and the Prostate.**—In two cases of enlargement of the prostate reported by Murphy, one a senile enlargement and the other a traumatic inflammation in a young adult, the administration of ergot apparently reduced the obstruction caused by the enlarged prostates. Murphy urges the more frequent use of ergot in these cases. He gives 1 dram every four hours.

Sei-I-Kwai Medical Journal

Sept. 10, 1918, **37**, No. 9

16 Content of Fatty Acids and Cholesterin in Brain. T. Nagayama.—p. 35.
17 Study of Ferment's Trypsin. Y. Masal.—p. 36.

Archives de Médecine des Enfants, Paris

November, 1918, **21**, No. 11

18 *Endocrine Glands and the Bones. V. Hutinel.—p. 561. Cont'n.
19 Mongolian Blue Spot in Brazil. C. Ferreira.—p. 600.
20 *Pancreatic Infantilism. J. Comby.—p. 602.

18. **The Endocrine Glands and the Bones.**—In this instalment of this general review of the pathology of childhood, Hutinel discusses what is known to date of the synergy of the ductless glands, the pluriglandular syndromes, and the malformation of bones and other tissues under the influence of abnormal endocrine functioning: athrepsia and hypotrophy in young infants, and rachitis, the lymphatic state and anemia in older children. These are all dystrophies. The organization of the cellular elements is sluggish and stops before reaching its normal consummation. The elements persist in the intermediate stage and are neither cartilage nor bone. Rachitis in syphilitics is rachitis the same as in other conditions, but as it affects an already sensitized bone, the damage is greater.

20. **Pancreatic Infantilism.**—Comby compares what Byrom Bramwell and others have written on this subject, with a recent communication by Bullrich. (Summarized in The Journal, Sept. 28, 1918, p. 1098.) Bullrich's case seemed to be a typical example of pancreatic insufficiency, but necropsy disclosed that others of the endocrine glands were involved in the clinical picture far more than the pancreas. Pancreas treatment would have had little chance to benefit the patient in such a case. Comby queries whether there are two different syndromes with the same symptomatology, or whether the same affection might in different cases affect merely the pancreas or invade others of the ductless glands.

Bulletin de l'Académie de Médecine, Paris

Oct. 1, 1918, **80**, No. 39

21 *The 1918 Epidemic of Influenza. A. Netter.—p. 275.
22 *Errors in Diagnosis of Influenza. R. Wurtz and F. Bezançon.—p. 286.

23 *Influenzal Pulmonary Edema. P. Ravaut.—p. 290.
24 Whole Cinchona in Treatment of Influenza. R. Dubois.—p. 291.
25 The Arterial Pressure in Addison's Disease. R. Porak.—p. 293.

Oct. 15, 1918, **80**, No. 41

26 International Scientific Relations Committee Report.—p. 317.
27 Prophylaxis of Influenza. Committee Report.—p. 317.
28 *Prophylaxis of Contagious Diseases. H. Vincent and Lochon.—p. 348.
29 Compulsory Notification of Tuberculosis. M. Pamard.—p. 358.
30 Saccharomyces Dermatitis. H. Hudelo and others.—p. 360.

21 to 23. See Paris Letter, p. 1596.

28. **Prophylaxis of Influenza.**—Vincent reports favorable experiences with masks, and comments on the relative immunity of infants to influenza. In the discussion that followed, Henrot recalled that he had urged in 1874 the general adoption of a protecting mask he had devised for diphtheria and malaria. It was put on and worn like spectacles. His proposal and device were pooh-poohed at the time, although he cited favorable experiences reported by Tyndal in an epidemic in Lancashire after the wearing of masks had been made compulsory. Henrot and his pupils found the masks useful at certain necropsies, and they have been using them thus for forty-four years.

Bulletins de la Société Médicale des Hôpitaux, Paris

July 26, 1918, **42**, No. 27

31 Tuberculosis in Professions in Greece. P. Rondopoulo.—p. 807.
32 Facial Diplegia after Lethargic Encephalitis. Sainton.—p. 808.
33 Peduncular Sequels of Lethargic Encephalitis. Lortat-Jacob and G. L. Hallez.—p. 811.
34 *Cauterization plus Occlusion for Lupus. F. Balzer.—p. 814.
35 Heart Disease and Fitness for Service. Gouget.—p. 826.
36 *Echinococcus Cyst of Liver without Gallstones. Gouget.—p. 831.
37 *Spirochete Jaundice and Sclerous Nephritis. A. Pissavy.—p. 835.
38 Tuberculous Lacrimal Gland and Lid. Achard and Leblanc.—p. 838.
39 *Retention in Acute Diseases. C. Achard and A. Leblanc.—p. 845.
40 *Spirocheturia and War Nephritis. Salomon and Neveu.—p. 852.
41 *Meningitis in 1918. P. Nobécourt and C. Richet, Jr.—p. 858.
42 Chest Complications of Malignant Granuloma. M. Favre.—p. 864.
43 Case of Typhoid plus Paratyphoid B. G. Etienne.—p. 866.
44 Pneumonia Preceded by Pneumococcus Septicemia. P. P. Lévy and J. de Léobardy.—p. 871.
45 *Transfusion of Blood in Meningococcemia. L. Ribadeau-Dumas and E. Brissaud.—p. 875.
46 *Nephritis, Aortitis and Gangrene in Early Syphilis. C. Laubry and L. Marre.—p. 882.
47 Ingestion of Gelose Gelatin to Form Protecting Coating for Stomach. F. Ramond, Robert and A. Petit.—p. 886.
48 Transient Lethargy with Azoturia and Azotemia. E. May.—p. 888.

34. **Treatment of Lupus.**—Balzer reports some typical cases to show the benefit which may be realized by application of silver nitrate, zinc or chromic acid to the lesions of tuberculous lupus, protecting them afterward against secondary infection by an occlusive dressing. This also serves to reduce the virulence of the microbes already in the lesion.

36. **Echinococcus Cysts in Liver Simulating Gallstone Mischief.**—The woman of 50 related that she had expelled some gallstones the year before, and, naturally, the jaundice, pains and obstruction of bile were ascribed to cholelithiasis. The liver fissured during the operation and a purulent fluid escaped, but no gallstones were found. The patient succumbed the same day. The diagnosis had wavered between gallstones and a neoplasm; Gouget had been impressed with the abrupt onset of symptoms and the extreme prostration accompanying the pyretic jaundice by the second week. Evidently a fixation test for echinococcus would have given the clue, but this would not be applied in such a case unless every case of cholelithiasis were systematically subjected to it. The liver and bile passages were honeycombed with pus, and a large echinococcus cyst was found in the upper part of the liver, the farthest removed from the biliary passages. Hydatid fragments were found in the common bile duct, and had evidently been responsible for the colics, but the jaundice was probably the consequence of the parenchymatous hepatitis. Accumulating experience has shown the rarity of direct compression as the cause of the obstruction in such cases.

37. **Sclerous Nephritis with Spirochete Jaundice.**—The evidently recent development of the sclerous nephritis, with other features of the case reported, seem to sustain the assumption that the kidney changes were the direct result of the spirochetosis itself. The reason why such changes have not been observed more often with spirochetosis is probably that the latter does not prove fatal at the time. When the kidney disease is observed a few months later, no one thinks of connecting it with the spirochetosis. In the present case the man succumbed to an intercurrent bowel disease, so the spirochetosis damage was discovered at the moment.

39. **Retention in Acute Diseases.**—Achard and Leblanc have applied various methods of exploration of kidney functioning in acute diseases in the last few years, and tabulate the findings in twenty-three cases, mostly of typhoid and pneumonia. The retention of water, urea and chlorids may be due to an acute complicating infectious nephritis but, as a rule, the urine shows a high urea content, up to 40 per thousand or over, in some cases, and the kidneys seem normally permeable. The excessively high urea content of the blood is due merely to the oliguria, and possibly to the disassimilation of nitrogen; this is rendered probable by the contrast in some cases between the high figure of the azotemia (2.78 and 1.86 in two cases) and the high urea output (15.7 and 23.2 in these two cases). As the crisis passes and convalescence is installed, a phase of excessive activity on the part of the kidneys follows. This seems to be a general phenomenon, but its intensity varies from moment to moment, and it may be brief or may persist a long time. Whenever it occurs, there are always indications of a disturbance in the balance of the fluids of the organism: The organism is in a state of crisis, usually secondary to a state of more or less pronounced retention. During this phase, Ambard's ureosecretory constant may be much modified temporarily. Under Widal's influence, the rôle of the kidneys in retention of salt has been regarded as predominant, but Achard and Leblanc insist that to date no conclusive proof has been offered that the state of retention is due to functional insufficiency of the kidneys—a specific impermeability for sodium chlorid. This assumption is merely an attempt to explain the facts observed, and it often does not conform to them. It is actually paradoxical to admit the coexistence of a secretory disturbance of this kind along with a perfectly normal concentrating power on the part of the kidneys. It is far more probable that certain factors acting in the inmost depths of the tissues play an important part in the metabolism of water. The researches of Mayer and Schaeffer on the lipocytic coefficients of the organs seem to throw new light on the question of the capacity of the organism for hydratation, as they reported in the *Journal de physiologie et de pathologie générales*, May, 1913, and January, 1914.

40. **Spirocheturia and War Nephritis.**—Salomon and Neveu have systematically examined the urine for spirochetes in every case of acute nephritis since August, 1916. They found spirochetes in eleven cases of war nephritis with a tendency to edema, but none could be detected in fourteen otherwise similar cases. The spirochetes resembled those of the icterohemorrhagic type but were a little longer, thinner and with more twists. They were found only on repeated examinations, and did not seem to be pathogenic for guinea-pigs.

41. **Meningitis in the Army.**—Among the twenty-eight cases of meningitis observed between last December and May, 1918, several different strains of meningococci were involved, even in the same focus. The mortality was over 56 per cent. The disease had subsided entirely for six months before last December. Then the cases developed at scattered points, and American soldiers were most numerously affected. Infection with the meningococcus B seems to be particularly virulent, and a polyvalent serum has little effect on it.

45. ***Transfusion of Blood in Treatment of Meningococcemia.***—The young soldier's meningococcemia seemed to develop in a series of cycles of allergy of four or five days' duration each, with chills and high fever, eruption and diarrhea, with a brief interval of relief between the cycles. There was a phase of meningitis at one time but it was transient, and the cyclic course was not modified. Each cycle left the patient more debilitated. Serotherapy brought an anaphylactic shock when given by the vein after failure of intraspinal administration. Vaccine therapy and a fixation abscess failed likewise.

Finally, 50 c.c. of citrated blood from a healthy man were infused and the general condition improved at once. The following three days, 20, 10 and 20 c.c. were transfused and the improvement continued, no meningococci being found in the blood. Suspension for two days was followed by return of fever, and no benefit from transfusion of 40 c.c. of blood the fifth day, but 20 c.c. the seventh day brought great improvement, and it continued under repeated transfusion of 20 c.c. of blood the sixth, eighth, ninth, twentieth and twenty-first days, always in the morning. Two weeks later the patient had gained 11 pounds; the reds increased from 2,140,000 to 3,900,000 under the influence of the transfusions. In less than six weeks from the first one, the man left the hospital completely cured. He might have recovered without the transfusion, but it would have been a much slower process and there might have been complications which he escaped by this means. When the transfusion was done at evening, it displayed no beneficial action, but in the morning it warded off the chills, etc. There was no specific action, as the donor had never had meningococcus infection, but it seemed to prevent the development of the anaphylactic phenomena caused by the presence of the meningococci in the blood. The alexin in the blood always showed an increase after the transfusion.

46. **Syphilitic Nephritis and Gangrene.**—The nephritis developed in the man of 43 one year after the primary chancre which had been given thorough specific treatment. The nephritis required hospital treatment, and the albuminuria was brought down from 12, 16 or 18 gm. to 5 or 6, when suddenly symptoms of aortitis became manifest, both thoracic and abdominal. The abdominal aortitis simulated acute appendicitis at first, but the circulation in the legs became defective, with embolism and patches of dry gangrene compelling amputation of one leg. After this, under arsphenamin treatment the man regained his health and earning capacity. The syphilis in this case must have been of a peculiarly malignant type. On account of the aggravation of the nephritis symptoms under the first injections of mercury, the mercury was suspended as the patient seemed to be doing sufficiently well under dieting and repose. But this proved to be a grave mistake, as otherwise the aortitis might have been warded off. Syphilitic nephritis should be given thorough treatment, regardless of transient exacerbation under it. In another case, the nephritis, with 30 gm. of albumin, was finally cured after a number of dramatic fluctuations, by prolonged mercurial and iodid treatment. In the case reported the final recovery was realized only under large doses of arsenobenzol kept up for eighteen months, regardless of the transient exacerbations immediately after each injection.

Paris Médical

Sept. 21, 1918, **8**, No. 38

49 *Ether Dressings. P. Descomps and A. Richard.—p. 229.
50 Suprarenalitis after Dinitrophenol Poisoning. P. Merklen and Malloizel.—p. 233.
51 *Echinococcus Chyluria. P. Remlinger.—p. 235.
52 Acute Nephritis with Scabies. G. Milian.—p. 237.

49. **Ether Dressing.**—Descomps and Richard say that irrigation of wounds with ether has proved its usefulness to such an extent that it seems destined to survive the war as a simple, convenient and effectual complement to dry asepsis. Especially in rural practice, where infrequent changes of dressings must be the rule, it will have a wide field of usefulness, they think. The fats and certain alkaloids in the wound are dissolved by the ether and are drawn up and out of the wound by the capillary attraction of the dressing, so that they no longer are absorbed by the organism or serve as a culture medium for the microbes. The ether also destroys the red corpuscles in the wounds, which leaves the phagocytes free to conquer the microbes. Its principal action therefore is in promoting the autosterilization of wounds, so that it may be regarded as a dressing which supplements the simple, fundamental dry dressing of the aseptic technic. The inflamed region is covered with two or three layers of gauze and this is moistened with the ether three times a day. Above this is a sheet of impermeable tissue and a thick pad of carded cotton. The whole is fastened with gauze, loose in the center and tight around the edges. The ether is renewed through a rubber tube or tubes left for the purpose under the dressing or by working a tube in each time. They use from 10 to 40 c.c. of fresh ether each time. The patient feels a sensation of cold when the ether reaches the tissues. The outer end of the tube is kinked to retard evaporation. The ether diffuses all through the wound which is a great advantage over hypochlorite solutions, which are distributed only by gravity. The ether dressing being practically a dry dressing is free from the disadvantages of a fluid. But the chief usefulness of the ether is in preparing a wound for primary suture. Nothing else can approach it for this, they say.

51. **Echinococcus Chyluria.**—Remlinger reports the cases of a man and of a woman who eliminated in the urine the membranes and vesicles from an echinococcus cyst above the bladder. No operation was attempted in either case and the general condition has kept fair to date. The chyluria was probably due to compression in both cases. It had existed long before there was anything to suggest echinococcus disease.

Presse Médicale, Paris

Sept. 19, 1918, **26**, No. 52

53 *Syphilitic Peritonitis. M. Letulle.—p. 477.
54 *Dead Bone in Cases of Fractures. R. Leriche and Policard.—p. 479.
55 *Infantile Scurvy. J. Comby.—p. 480.

Oct. 3, 1918, **26**, No. 55

56 *Elimination of Spirochetes in Urine. Garnier and Reilly.—p. 505.
57 Microbian Flora of Influenza. Orticoni, Barbie and Leclerc.—p. 508.
58 *Convergence of Eyeballs After Shell Concussion. P. Descomps, J. Euzière and P. Merle.—p. 509.

53. **Syphilitic Peritonitis.**—Letulle insists that syphilis attacks the peritoneum much oftener than is generally recognized. He found a positive Wassermann reaction in seventy-four of 154 cases of cirrhosis of the liver, and treatment as for syphilis cured the peritonitis in many of these. This syphilitic peritonitis is largely responsible for the ascites, and as it is curable, this element in the clinical picture can be eliminated. Every case of cirrhosis with ascites should be suspected of syphilis, even when there is a known history of alcoholism or tuberculosis. It follows logically that every case of cirrhosis of the liver should be given systematic and prolonged antisyphilis treatment. No harm will be done in any event, while great benefit may result in case syphilis has any share in the clinical condition. Letulle urges microscopic study of the peritoneum in syphilitics, and gives seven illustrations of different histologic findings liable to be encountered.

54. **Dead Bone with Fracture.**—Leriche and Policard report the results of research which demonstrate that the white denuded bone in a war wound is actually dead, and as much a foreign body as an engrafted segment of bone. It has the advantage over the latter, however, that it is in intimate anatomic connection with live bone, and the process of repair proceeds smoothly through the haversian canals. If these canals are obstructed—and this is the rule when there has been an infectious process at the spot—normal repair is hampered. The microscope thus confirms the clinical experience that an aseptic evolution of the wound in the soft parts is the best guarantee of correct and rapid healing of the fracture.

55. **Infantile Scurvy.**—Comby reiterates that every infant given a sterilized food, either milk or proprietary foods, for several months, without any fresh or living food, is menaced with scurvy. In the fifty-five cases he has encountered, in over forty-five an erroneous diagnosis had been made and the children had been given sodium salicylate for the assumed rheumatism, or they had been treated with electricity and massage for the supposed acute poliomyelitis, or given mercurial treatment for assumed syphilis, or incisions and trephining had been done for supposed acute osteomyelitis. Some had been put in a plaster cast or trough for coxalgia or Pott's disease. In the last few months he has encountered thirteen new cases, and in 90 per cent. the attending physician had failed to recognize the scurvy. One infant recently had been treated for six weeks for rheumatism and then for acute

poliomyelitis, no one heeding the one-sided diet. Comby ordered the child to be left quiet in its cradle, not bathing nor dressing it, nor moving it abruptly in any way. A teaspoonful of grape juice was given twice a day, and fresh milk, boiled, was given instead of condensed milk. In eight days recovery was complete. The children with scurvy are generally between 6 and 18 months old, and the painful pseudoparalysis of the legs is a prominent symptom.

56. **Spirocheturia in Spirochete Jaundice.**—The pathogenic spirochetes are not found in the urine as a rule until between the fifteenth to the twenty-third day of the disease, and they are not regularly present even then.

58. **Convergence of Eyeballs After Shell Concussion.**—This sign of organic injury from shell concussion occurs during equilibration tests. Descomps and his co-workers report ten cases, and they regard it as an indication of some minute focal brain lesion.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Oct. 12, 1918, **48**, No. 41

59 *Charcoal in Chronic Intestinal Disease. E. Lenz.—p. 1361.
60 Prophylaxis of Influenza. A. Hotz.—p. 1372.
61 Experiences with Influenza in Civilian and Military Circles. H. R. Schinz.—p. 1374. Conc'n.

Oct. 19, 1918, **48**, No. 42

62 *Treatment of Severe Influenza with Convalescents' Serum. E. Liebmann.—p. 1393.
63 *Viscosimetry and the Blood Corpuscles. A. Alder.—p. 1405.

59. **Charcoal in Chronic Intestinal Disease.**—Lenz has been giving animal charcoal systematically in cases of chronic disease of the small intestine and other conditions in which absorption of bacterial and other products was poisoning the system. The charcoal is given as far as possible from the meals, and in the smallest amounts that prove effectual, in order to refrain from interfering with the digestive juices. From one to three heaping teaspoonfuls of the charcoal (from 5 to 10 gm.) are taken on retiring, stirred well into a glass of hot water or chamomile, linden flower or valerian tea. In acute phases, up to 20 gm. can be taken. In acute diarrheic conditions during the war, from 80 to 100 gm. were sometimes taken daily. The prolonged treatment with small doses is kept up for a few weeks after tolerance for a more normal diet has been regained. In cases of chronic putrefaction and fermentation dyspepsia and catarrhal conditions in the small intestine, he keeps up this continuous mild charcoal treatment for years, with occasional suspension. When the charcoal tends to induce constipation, he orders an occasional course of alkaline saline mineral waters, a glass cold or hot on rising. This clears out the charcoal from the digestive tract so that the processes of digestion can proceed unhampered.

He has never witnessed any serious by-effects from this prolonged charcoal treatment. Occasionally the charcoal formed lumps in the stools, and there is of course a possibility of anthracosis. Mönch has also recently reported a case in which four days of charcoal treatment were followed by palpitations, rapid pulse and congestion of the face when any alcohol was taken. Lenz witnessed the subsidence of jaundice and of urobilinuria in two cases of gallbladder disease under the influence of the charcoal. The latter seems to spare the liver by binding the toxins in the bowel so the liver is spared the task of detoxicating them. Lichtwitz has reported brilliant success in treatment of pernicious anemia with charcoal, long continued and supplemented with frequent lavage of the stomach. This treatment is based on the assumption of gastro-intestinal autointoxication as the cause of pernicious anemia. This assumption is sustained further by Seyderhelm's discovery that pernicious anemia in horses is caused by the presence of gastrophilus larvae in the stomach.

62. **Serotherapy of Influenza.**—Liebmann reports from the medical clinic at Zurich, in charge of Eichhorst, twenty-three cases of severe pneumonia in influenza in which systematic treatment was applied with convalescent's serum injected subcutaneously or into a muscle. The clinical verdict is favorable although beneficial action was not apparent in every case. The refractory ones were all far advanced, some with septicemic phenomena, evidently from mixed infection. In the other cases, after injection once or twice of 20 or 30 c.c. of convalescent's serum, the pneumonia, pronounced cyanosis and hemorrhagic sputum rapidly subsided and the threatening general condition promptly improved. Other patients with apparently lighter attacks were much longer in recovering than in those cases. In some instances the fever subsided rapidly although the cyanosis and delirium persisted for some time. Extreme caution is necessary to ensure that the serum to be injected is sterile; in one case streptococci were found in the blood on a second examination when it had been apparently sterile at the first examination. He insists that prudence requires three days' control of the cultures from the blood and overinoculation on agar. The serotherapy seems to have an antitoxic action rather than a bactericidal, as it did not ward off recurrences.

63. **Viscosimetric Determination of Volume of Blood Corpuscles.**—Alder shows how the viscosimeter is able to determine the volume of the blood corpuscles, the average size of the separate cells, and the concentration of the hemoglobin in the red corpuscles. His research has shown a most remarkable tenacity in the hemoglobin content of each cell. A given volume of corpuscles can thus be carrier of only a certain amount of hemoglobin. This physiologic property of each cell to always carry the maximum quota of hemoglobin seems to be constant through all pathologic conditions, and he regards it as extremely important from several points of view. The only way by which the organism is able to expose larger amounts of hemoglobin to oxidation in the lungs, is by increasing the numbers of red corpuscles. Even in pernicious anemia, the high color index is due merely to the fact that the cells are larger than normal. There is no appreciable disturbance in chlorosis, etc., until the hemoglobin content falls below the normal figure. Over 99 per cent. of the bulk of the corpuscles is formed of the reds. He took up the plasma in a pipet after the blood had been treated with herudin, and used the plasma to dilute a similar amount of the same blood. By comparison of the specimens then, the volume and the viscosity could be estimated, a system of parallel coordinates allowing the third quantity to be ascertained from the two known quantities. The findings coincide with those of the refractometer and other tests. The average of extensive researches by the different methods shows that the normal proportional bulk of the blood corpuscles is between 42 and 46 per cent., and the bulk of a single red corpuscle averages 88 cubic microns in normal conditions. The range in disease is wide, from 66 cubic microns in chlorosis to 119 and 165 in pernicious anemia. In hemolytic anemia the corpuscles were within the normal range.

Gazzetta degli Ospedali e delle Cliniche, Milan

August 11, 1918, **39**, No. 64

64 Mutilations of the Face: Necessity for Centralizing Measures for Reconstruction. A. Maggioni.—p. 621.
65 *Immediate Operation for Skull Wounds. A. de Castro.—p. 624.

August 15, 1918, **39**, No. 65

66 Calcium Sulphate in Therapeutics. C. Tosatti.—p. 634.
67 Varices of Subcutaneous Abdominal Veins. E. Greggio.—p. 636.

65. **Skull Wounds.**—De Castro reiterates that no matter how apparently insignificant a war wound of the skull, operative measures are imperative without delay. The skull wound should be cleared out acording to the same principles as for any wound elsewhere. Titrated solution of calcium hypochlorite solution has proved extremely effectual for this in his experience. He makes a practice of exploring the wound with the finger, using a Kocher forceps guided by the finger to extract any foreign bodies. If a bullet cannot be readily found, he leaves it for a later intervention.

Pediatria, Naples

October, 1918, **26**, No. 10

68 *Asthma in Children. L. M. Spolverini.—p. 569.
69 *Treatment of Chorea. R. Pastore.—p 577.

68. **Asthma in Children.**—Spolverini is inclined to ascribe the tendency to asthma in children to deficient functioning on the part of the sympathetic system innervating the smaller bronchi. This paresis of these nerves allows the vagus nerve

to have predominant control, so that the outcome is practically vagotony, although in reality the vagus is normal. This assumption is sustained by the favorable action of epinephrin in asthma, as this does not paralyze the vagus but merely stimulates its sympathetic antagonist. In his experience with nineteen cases of recurring asthma in children, from 6 months to 10 years old, he was impressed with the constant lymphatic status in all, as also the extremely irritable condition of the nerve terminals, both in the motor and vegetative innervation, and also the nervousness and uricacidemia noted almost constantly in one or both parents. He was further impressed with the benefit under suprarenal treatment, even outside of the attacks of asthma, and also under treatment with iodin and calcium preparations and mineral waters of the Fiuggi and Montecatini types. These children, more than any others, benefit from a return to nature. During the attacks of asthma, 1.5 gm. calcium bromid proved a valuable adjuvant to epinephrin. He gave both by the mouth, not venturing to give the epinephrin by the vein to children. The loss of normal balance in the endocrine system, which seems to be responsible for this asthma-producing neurosis, might be instructively studied on children, especially the assumed hyperproduction of hormones from the lymphatic glands, and the deficient suprarenal functioning.

69. **Magnesium Sulphate in Treatment of Chorea.**—Pastore reviews the literature on the treatment of chronic chorea by intraspinal injection of magnesium sulphate according to Marinesco's technic. Excellent results have been reported by a few but in Caronia's case there were extremely severe by-effects, the child collapsing at once after the injection, with paralysis of all the muscles and unconsciousness, respiration becoming rare, with pauses, and only the heart beat showing signs of life, the temperature dropping to 35 C. Artificial respiration was kept up systematically for about twenty-four hours, with continuous inhalation of oxygen, and the child recovered. There were no further manifestations of the chorea from immediately after the injection. Pastore here reports four cases in which the magnesium sulphate was given in small repeated doses, thus curing the chorea without danger. She made from five to seven intraspinal injections of from 0.1 to 0.2 gm. of magnesium sulphate in a 25 per cent. solution, to a total of 0.4 or 0.5 gm. The intervals were one or two days at first, and three or seven days toward the last. There was no appreciable reaction, and improvement was pronounced after the third injection in one child; after the sixth or seventh in two others. One child was not completely cured, although notably improved by the treatment. In this girl of 11, the third injection was followed for two days by intense headache, superficial respiration and sluggish pupil reactions, and the choreic movements returned, but improvement was pronounced under two more injections of the sulphate.

Riforma Medica, Naples

Sept. 21, 1918, **34,** No. 38

70 *Plastic Motor Surgery. A. Pellegrini.—p. 746.
71 Typhoid and Paratyphoid Occurring in the Vaccinated. V. Panto.—p. 749.

70. **Motor Control of Artificial Limbs.**—Pellegrini reports the details of four cases in which he remodeled the amputation stump to permit volitional kinetic control of the prosthesis. He also describes one case in which the amputation was done with a special technic for this purpose. A different method was followed in each case, as is described with illustrations, but all were comparatively simple and easy. His experience to date has been more favorable with the extraterminal loop, but each stump has to be considered separately.

Rivista di Clinica Pediatrica, Florence

July, 1918, **16,** No. 7

72 *Pituitary Insufficiency. M. Pincherle.—p. 337. Concluded.

September, 1918, **16,** No. 9

73 The Population After the War. D. Pacchioni.—p. 449.
74 Growth and Pathology of Twins. A. Borrino.—p. 474. Concluded in No. 10, p. 521.

72. **Pituitary Insufficiency.**—Pincherle gives seven pages of bibliography, and tabulates 116 cases from the literature in which the effect of pituitary treatment was recorded, as also seventeen reports on experimental lesions of the pituitary body. Comparing all this testimony with his own clinical experience amply confirms the connection between abnormal polyuria and backward physical development and pituitary insufficiency. Corroborating minor signs are the effects of pituitary treatment, the extreme tolerance for carbohydrates, the abnormally small sella turcica, anomalies in ossification, and Cushing's thermoreaction, low blood pressure, asthenia and drowsiness. In some of his cases only some of these minor points were evident, and he classifies them as "masked pituitary syndromes." They are important for research on the endocrine system, but the chief importance of their discovery lies in the possibility of improvement and cure under organotherapy. In one of his patients the arrival of puberty was accompanied by considerable development of fat, and menstruation was seriously irregular while some of the sexual characters were abnormal. Pituitary treatment in his cases reduced the excessive diuresis and polydipsia, but did not seem to modify durably the diabetes insipidus. The children increased in height and weight, but not all the signs of backward physical development subsided. Enough were modified, however, to encourage further experiments in this line with great promise. In all his cases albuminuria could be induced by forced lordosis, which indicated a low resisting power on the part of the kidneys.

Annaes Paulistas de Medicina e Cirurgia, S. Paulo

February, 1918, **9,** No. 2

75 *The Amebas Infesting Man. II. Aragão.—p. 25.

75. **Ameba Parasites.**—Aragão discusses the endamebas and their relation to tropical dysentery. The number of cases of the latter has increased constantly in S. Paulo in the last six years, from four to 543 reported cases. He admits only two species parasite in man, the one causing dysentery, and the harmless *E. coli.* Kittens seem to be the best animals for tests with the parasites. The latter can be introduced into the rectum; the encysted forms can be given by the mouth as they are not affected by the gastric juice. The dysenteric symptoms develop in from eight to thirty days. He discusses the features which differentiate the pathogenic from the harmless endameba, especially the small size of the cysts of the former and the small number of nuclei. From one to four is the rule and only exceptionally up to eight, while the cysts of the *E. coli* are about twice as large and have from eight to eighteen nuclei. Persons can be carriers of the dysentery ameba and cysts without ever having had dysentery. The danger from such carriers is obvious. Drugs do not act directly on the encysted forms of the endameba but they check the multiplication of the parasite into these forms. Epinephrin, which Bayma advocates in treatment of amebic disease, acts mainly by keeping down the production of the encysted forms. None of the drugs that act on the *E. histolytica* seem to have the slightest action on the *E. coli.* When there is mixed infection with both, the latter emerges unscathed from the treatment which destroys the histolytica. The latter will keep alive for twenty hours on ice or in feces in a tube of serum or ascitic fluid. They have been kept at room temperature in cool weather for ninety-six hours.

Differentiation is difficult if they are dead, especially when the specimen contains epithelial cells and dead leukocytes. If not dead, motility can sometimes be restored by placing the specimen in the incubator at 37 C. for half an hour or an hour. He recommends for the stain to dilute the 0.5 c.c. of feces in 2 or 3 c.c. of a 0.1 per cent. solution of gentian violet in physiologic solution to which has been added 0.3 per cent. of acetic acid. This keeps the elements of the specimen unaltered for several days. It only exceptionally occurs that the vegetative and the encysted forms are found together. Usually transformation to the encysted form occurs in all the parasites about the same time.

Archivos Latino-Americanos de Pediatria, Buenos Aires

May-June, 1918, **12,** No. 3

76 *Pulmonary Tuberculosis in the Newly Born. M. A. Ugon.—p. 213.
77 *Scurvy in Breast Fed Infant. J. Bonaba.—p. 218.

78 *Streptococcus Septicemia. I. Luisi.—p. 225.
79 Tuberculous Meningitis after Mumps Meningitis. C. Pelfort.—p. 232.
80 *Spasm of Glottis. J. Giampietro.—p. 237.
81 *Tardy Inherited Syphilis of the Liver. A. Casaubon and S. Satanowsky.—p. 243.
82 *Datura Poisoning. C. S. Cometto.—p. 260.
83 Uncontrollable Vomiting in Infants. L. V. Blanco.—p. 267.
84 *Chronic Bronchopneumonia with Recovery. J. P. Garrahan.—p. 272.

76. **Pulmonary Tuberculosis in the Newly Born.**—The two infants described were born a little prematurely and were suckled by their consumptive mothers. One developed signs of pulmonary tuberculosis in a month after birth; the other, not until the third month. Tuberculin tests elicited a positive reaction the fiftieth and the ninetieth days, the responses previously having been negative. Necropsy confirmed the clinical diagnosis.

77. **Scurvy in Breast Fed Infant.**—Bonaba reviews the few cases on record of scurvy in breast fed infants. In the case he reports from his private practice the child was 7 months old and previously healthy, and the parents were healthy also except that the mother was of a nervous temperament.

78. **Empyema from Streptococcus Septicemia.**—The girl of 4 developed the septicemia from an erysipelatous affection of the external genitals. It seemed to spread and involve almost all the organs, with grave toxic symptoms until bilateral empyema developed. This seemed to act like a fixation abscess, with complete recovery after evacuation of the pus and rinsing the pleura with oxygen.

80. **Spasm of the Glottis.**—After forty-nine paroxysms from spasm of the glottis in the first twenty-four hours and thirty-three the next day, the tendency rapidly subsided under a change of diet. The male infant was 5 months old and for two months had been fed irregularly on cow's milk. The prompt improvement and cure followed directly on regulation and change of the diet.

81. **Tardy Syphilis of the Liver.**—The four cases summarized were in children from 7 to 12 years old. One had been given a course of treatment for assumed tuberculous peritonitis as the liver and abdomen were much enlarged and there were frequent attacks of diarrhea and slight fever. Under mercurial treatment conditions promptly returned to normal, and there has been nothing since to suggest a tuberculous process. In two other cases intense pains in the right hypochondrium or attacks of jaundice were cured by mercurial treatment, but the chronically enlarged and knobby liver and spleen did not show much change in the two girls of 11 and 12. The fourth case was in a boy of 11; besides the chronic enlargement of liver and spleen there was a specific bone lesion in one tibia. The course of tardy syphilis of the liver is insidious and chronic, and when definite lesions are installed, they resist the most energetic mercurial treatment as in the last three of the cases described. There was no ascites in any of the children. The chronic liver disease permits long survival in such cases.

82. **Poisoning from Datura.**—The two children had been playing with the fruit of the *chamico*, said to be the popular name for *Datura stramonium*, which explained the delirium, the hallucination of spiders and snakes, the incontinence, extreme dilation of the pupils, convulsions followed by contracture, exaggerated by the slightest touch, and one of the children had a severe eruption suggesting scarlet fever. Both children collapsed when stood on their feet. The bowels were cleared out by injection of a pituitary extract and purgatives, sedatives were given and stimulants, camphorated oil, etc. There was an interval of twenty hours before medical aid reached the children, and the first suspicion from the clinical picture was that the children had rabies.

84. **Chronic Bronchopneumonia.**—Garrahan's patient was a girl of 8 who developed bronchopneumonia in the course of whooping cough. It persisted extremely grave for five months and then subsided completely, without sequels during the two years since. The child required oxygen daily for more than two months, and later in the acute exacerbations. The recurring pains in the spine were relieved by reclining on a hard bed. The vomiting and anorexia hampered nutrition but on milk, soups and lightly alcoholized fluids some strength was regained, and by the second month purées and cooked fruits were given notwithstanding the fever; eggs and fish were added the third month. The final complete recovery shows that the dyspneic, febrile semicachexia in such cases does not necessarily entail an absolutely unfavorable prognosis.

Boletin de la Asociacion Medica de Puerto Rico, San Juan

September, 1918, **14**, No. 120

85 *Prophylaxis of Transmissible Diseases. E. Font.—p. 247.
86 Intravenous Mercurial Treatment of Syphilis. Cabrera.—p. 255.
87 Perforation in Typhoid. F. H. Rivero.—p. 268.

85. **Prophylaxis of Transmissible Diseases in Porto Rico.**—The regulations in Porto Rico compel notification of contagious diseases, not only of the typical cases with certain diagnosis but also those in which the diagnosis is doubtful or the disease so atypical that there is merely suspicion as to its nature. The Public Health Service appointed a permanent commission for the study and investigation of the soil, environment, etc., of the transmissible diseases of all kinds, including those peculiar to the island. The commission is composed of the chief of the Negociado de Enfermedades Transmisibles and his assistant, a pathologist; the chiefs of the chemistry and bacteriology laboratories of the service; the chief sanitary engineer, and an entomologist. Every facility is afforded practitioners for the bacteriologic, chemical and biologic study of each case, and serums and vaccines are supplied free of charge for the indigent. The commission pays special attention to a written or verbal report on unusual cases, making every effort to conduct research that may add to the reputation of the medical corps of the island. Members of the commission go to make investigations on the spot, and have already made valuable contributions to the study of spirochetosis, filariasis, bilharziasis, pellagra, lepra, etc., on persons in quarantine. These investigations have determined, for example, the hitherto unsuspected presence of tropical frambesia in the island, a disease known to be extremely contagious, but which had previously escaped detection and been classed as the superficial lesions of syphilis. The fact that the treatment for the assumed syphilis cured the frambesia, was accepted as the confirmation of the diagnosis.

Brazil Medico, Rio de Janeiro

Aug. 31, 1918, **32**, No. 35

88 Brazilian Gregarinas, 9. C. F. Pinto.—p. 273.
89 *Paralysis of Muscles of Neck. M. Gesteira.—p. 273.

Sept. 7, 1918, **32**, No. 36

90 *The Diagnosis and Prognosis of Heart Disease. O. Clark.—p. 281.

89. **Paralysis of Muscles of Neck.**—Gesteira reports a case of what he calls Figueira's syndrome, the infant of 20 months being unable to hold her head erect. It sagged forward or backward. Lumbar puncture was negative, the cephaloplegia having developed in the midst of apparent health. In another infant it developed soon after diphtheria. The muscles regained normal tone in a few days in both, as also in Figueira's own cases. He ascribes the cephaloplegia to a sporadic atypical poliomyelitis infection, but other infections may be responsible.

90. **Heart Disease in Children.**—Clark emphasizes that medical inspection of schools over several years confirms that pure mitral regurgitation is never fatal if extremely violent physical exercise is avoided. One girl of 9 had strong fremitus and intense murmur during the whole of the diastole, loudest at the base of the heart. The child felt perfectly well and no pathologic antecedents were known. Two years later there was no further trace of the murmur. Clark relates further the case of a man of 71, who at 18 presented signs of mitral insufficiency, but has had no further symptoms from the myocardium during his long life of hard labor since. Physicians sometimes begin to listen to their own heart sounds, and discover a mitral murmur previously ignored and never causing appreciable disturbance. Other instances are related to prove that isolated mitral insufficiency is harmless, so long as exaggerated athletics are avoided. When it induces symptoms, we can be certain that there is concomitant

pericarditis, myocarditis or mitral stenosis. Among 3,000 children he has examined at Rio, he found eleven with severe heart lesions, congenital in three and consecutive to acute rheumatism in eight. In colder countries the average is said to be 12 per thousand, while in Rio, where rheumatism is rare, the average is only 3 per thousand.

Cronica Medico-Quirurgica, Havana

July, 1918, **44**, No. 7

91 Present Status of Leprosy. J. Chabas.—p. 389.
92 Some Medical Aspects of the War. F. M. Fernandez.—p. 413.

Gaceta Medica de Caracas, Venezuela

Aug. 31, 1918, **25**, No. 16

93 *Present Status of Spinal Anesthesia. L. Razetti.—p. 165.
94 Disturbances from Action of Chloroform on the Liver. D. Lobo and others.—p. 169.
95 Flagellate Parasite of Euphorbia Plant. J. Iturbe.—p. 173.

93. **Spinal and Chloroform Anesthesia.**—Razetti marshals the testimony for and against high and low spinal anesthesia. He concludes with an appeal for personal data from the surgeons and anesthetists of Venezuela, asking for reports on personal experiences, mishaps, preferred technic, etc.

Progresos de la Clinica, Madrid

September, 1918, **6**, No. 69

96 Present Status of Malta Fever. G. Pittaluga.—p. 133.
97 Congenital Cystohygroma Below the Ear. A. Perera.—p. 146.
98 *Fractures of Skull other than War Wounds. M. P. de Petinto.—p. 153.
99 **Intraspinal Treatment of General Paralysis.* G. R. Lafora.—p. 192.

98. **Fractures of the Skull.**—This extensive article is accompanied by nearly a hundred illustrations, many of them colored, showing among others the cracks produced by a stone weighing 18,765 gm. dropped from a height of about 5 feet on the skull, the cadavers in different positions. Among the other material studied were the necropsy reports of the last eight years in criminal and accident cases. De Petinto's findings confirm that the direction of the fissures can be estimated where the character of the agent dealing the blow and the point of the skull receiving the blow are known. Also that the character of the agent and the site of the blow can be determined from the character of the fracture fissures. He reviews the literature on the subject, including some of the recent war experiences. The fissures always trend toward the opposite and symmetrical point of the skull, fracturing or going around the bone obstacles in their path. The fractures are always direct, but the base of the skull is so much more fragile than the vault of the skull that when the fissure reaches the base it is liable to do much more damage than resulted from the direct impact. The latter may even be overlooked completely. In a hundred skulls examined he found only two in which the primary injury had been at the base of the skull. The above laws apply only to adult skulls; other conditions prevail in the fetal and child skull, as he explains.

99. **Treatment of General Paralysis.**—Lafora declares that he never witnessed such remarkable and such permanent remissions in general paralysis as in cases he has been treating with intraspinal injections of arsphenaminized serum. The rapid clinical improvement was followed more slowly but surely by improvement in the laboratory findings.

Revista Ibero-Americana de Ciencias Medicas, Madrid

August, 1918, **40**, No. 168

100 Fractures and Dislocations of the Elbow. S. G. Hurtado.—p. 82.
101 Clinical Forms of Dilatation of the Stomach. A. Lara.—p. 85.
102 Diagnosis in Ano-Rectal Disease. F. M. Suarez.—p. 113.
103 Status of Treatment of Acute Myocarditis. A. Mut.—p. 125.

Revista Medico-Cirurgica do Brazil, Rio de Janeiro

July, 1918, **26**, No. 7

104 Treatment of Uncinariasis. L. W. Hackett.—p. 299.

Revista Medica Cubana, Havana

July, 1918, **29**, No. 7

105 *Seventy-One Laparotomies. E. R. de Aragon.—p. 351.
106 *Indication with Contracted Pelvis. D. F. Ramos.—p. 354.

105. **Danger of Purgative in Appendicitis.**—The only death in Aragon's seventy-one laparotomies last year was in a case of appendicitis in which a saline purgative had been given the woman behind the attending physician's back. Peritonitis followed, in spite of the prompt operation.

106. **Indications with Contracted Pelvis.**—Ramos declares that the dietetic, medicinal and operative measures introduced in recent years in management of childbirth represent the greatest progress realized in the medical sciences. We now can count on getting the offspring past the absolute or relative stenosis of the superior strait, while leaving the mother in good condition for further pregnancies. The twenty-eight cases he describes show the variety of the indications and the necessity for individualization.

Revista Medica del Uruguay, Montevideo

September, 1918, **21**, No. 9

107 *Autoplastics for Stenosis of the Nose. J. M. Alonzo.—p. 514.
108 Case of Autochthonous Favus. J. B. Foresti.—p. 518.
109 The Juxtavesical Ureter. L. Merola.—p. 521.
110 **Intraspinal Echinococcus Cyst.* J. C. M. Fournier.—p. 523.
111 *Pregnancy Toxemia. H. F. Platero.—p. 534.
112 *Ureter Peril in Surgery. C. Stajano.—p. 545.
113 Inaccessible Vesico-vaginal Fistulas. A. Turenne.—p. 568.

107. **Plastic Operation on the Nose.**—The passages had become completely obstructed by cicatricial tissue after the young man had been kicked in the nose by a horse. Alonso bored the passages anew and lined them with skin. The grafts healed in place on one side but proved a failure on the other side, which in time healed. The lumen is less ample on this side and the stenosis displays a tendency to recurrence. But on the skin-lined side, practically normal conditions were restored. The grafts were Thiersch flaps with which a tampon of moist gauze was coated, top and all. The tampon fitted tight into the passage and was unmolested for five or six days. Then the central portion of the gauze tampon was pulled out, and the rest dropped off spontaneously not long after.

110. **Intraspinal Echinococcus Cyst.**—Fournier reports a case of paraplegia in a boy of 12 developing suddenly with no other symptoms except pains in the back for the last two weeks, and a similar attack of pains in the upper dorsal vertebrae for two weeks three years before. The motor disturbances were more an ataxia than paralysis; the spinal fluid seemed to be normal and the Wassermann and tuberculin tests elicited no response, but roentgenoscopy showed a process of rarefaction in the fifth dorsal vertebra and sixth rib, the seat of the pains and of some tenderness. A syphilitic osteitis at this point was assumed, but no benefit was derived from specific treatment, the paraplegia growing constantly worse. A successful operation revealed echinococcus cysts in the muscles close to the fifth and sixth dorsal vertebrae and in the posterior perimeningeal space, in the spinal canal, and also in the subpleural tissue on one side. The process was evidently of two or three years' standing and it had eroded vertebrae and yet had caused no persisting pains or root symptoms while the extreme hypotony of the paraplegia was in marked contrast to the exaggeration of the bone, periosteum and tendon reflexes and the foot clonus.

111. **The Eye Signs in Pregnancy Toxemia.**—Platero regards albuminuric retinitis as such a grave condition that he advises systematic examination of the fundus every twenty-five or thirty days after the sixth month of pregnancy. This is the only means to avoid disagreeable surprises. The albuminuric retinitis is usually accompanied by excessively high blood pressure, and is intimately connected with the autointoxication of pregnancy. The prognosis is always grave from the standpoint of vision, although the life is not in danger as with albuminuric retinitis under other conditions. The ophthalmoscopic examination should be supplemented by the determination of the blood pressure and the ureosecretory constant, Ambard's coefficient. Every pregnant woman with albuminuria, he reiterates, is in the grasp of intoxication, and in imminent peril of eclampsia or grave complications, insufficiency of the liver or kidneys, or retinitis. Treatment should aim at detoxication, lowering of the blood pressure and pro-

motion of diuresis. The pregnancy should be interrupted without further delay if vision does not return to normal under five days of medical treatment. He impresses on all pregnant women who consult him the necessity for certain dietetic restrictions, and declares that this spares the women the dangers of autointoxication. His experience has been conclusive in this line. He reports two cases in which the women spurned his dietetic advice and would not believe that their headaches, edema, and other disturbances were traceable to an improper diet, until vision began to be seriously impaired. He stopped all food but gave plenty of water, and purged, and drew 500 c.c. of blood. The urine showed 20 gm. urea, 2 gm. chlorids and 2 gm. albumin. Spontaneous delivery occurred in six days after the urea had dropped to 11.5 gm. and the albumin to traces and all the symptoms subsided. Conditions were graver in the second case, and a still-born fetus was expelled at term. Both women had borne several children and in both, the blood pressure dropped to normal after the venesection.

112. **The Ureter Peril in Gynecologic Surgery.**—Stajano discusses how to avoid injury of the ureters in gynecologic operations, comparing the normal and the pathologic anatomy of the region and especially the course of the ureters near the iliac vessels, the broad ligament and the crossing of the uterine artery, the para-uterine and the terminal segments. The ureter is at the mercy of any lesion developing in the pelvis, displacing or involving it. It is possible to avoid the ordinary dangers of injuring the ureter, but it is impossible to abolish all danger from this source as no one can foresee all the eventualities that may develop from the polymorphous and capricious lesions liable to become installed in the pelvis. He reports four cases of serious injury of the ureter during operations, cutting or ligating it by mistake.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

Sept. 7, 1918, **2**, No. 10

114 Complement Fixation with Trichophytosis. W. L. L. Carol. —p. 784.
115 *Autovisibility of Vessels in Retina. T. Wassenaar.—p. 792.
116 *Thread Test of Gastric Functioning. E. C. Van Leersum.—p. 794.
117 Influenza. L. Vos.—p. 796.
118 *Case of Quinin Poisoning. C. E. Van Der Horst.—p. 798.
119 Mental Disturbances in Influenza. G. F. Wesenhagen.—p. 799.

Sept. 14, 1918, **2**, No. 11

120 Variable Behavior of Different Strains of Cholera Vibrios Toward Blood in Culture Medium. I. Snapper.—p. 848.
121 The Limits of the Visual Field. E. Marx.—p. 858.
122 *Obstetrics in War Time. A. W. Ausems.—p. 863.
123 Early Purulent Pleurisy in Influenza; Resection of Ribs Imperative. V. C. M. Leesberg.—p. 864.
124 Malaria and Quinin Poisoning. A. Nieuwenhuijse.—p. 866.

115. **Autoperception of Retinal Vessels.**—Wassenaar relates that in watching a revolving disk with segments of black and white there comes a time when the impression is perceived of a red or violet background with streams of green color moving across it. The phenomenon is most pronounced when the disk stands in full sunlight and is then moved suddenly into the shade. The retinal vessels then are perceived as darker twisting lines running towards the blind spot, which is distinctly visible. The absence of large vessels in the fovea region is shown anew by these tests.

116. **Thread Test of Gastric Chemistry.**—Van Leersum reports a case in which Einhorn's thread impregnation test permitted the exact localization of a peptic ulcer. Gastro-enterostomy had been done a year and a half before, but the pylorus had not been shut off. The vomiting and the pains, increased by eating and by exercise, and the occult blood in the stools testified to ulceration, although the marked tendency to hysteria had convinced the attending physician that the whole trouble was a gastric neurosis. The Einhorn thread showed a brownish discoloration for a stretch of 2 cm. low on the thread. Immediately below there was an abrupt change in tint to green, showing the action of bile. The assumption therefore was that the new ulcer was in the region of the gastro-enterostomy opening, which roentgenoscopy showed was no longer permeable. This proved to be the case, and after excision of the fistula region with its ulcer, and closure of the pylorus, clinical recovery followed. In a second case this discoloration of the thread between 45 and 50 cm. from the lips, and the abrupt change to green below located the ulcer in the margin of the gastro-enterostomy opening. This patient had already had two operations for gastric ulcer, and refused to permit a third. The thread can be swallowed more readily if a scrap of cracker or meat is tied in the end. There is no need to use the duodenal bucket when the question is merely to locate the bleeding point. The length of the chest, etc., must be taken into account in estimating the location of the tumor from the thread. Einhorn's figures do not give a wide enough range. Van Leersum warns in conclusion that the ease and simplicity of this test commend it to such a degree that there is danger that physicians will use it exclusively and rely too implicitly on its findings. "L'histoire se repète," he says, "and especially in medicine, and this notwithstanding our dearly bought experience teaching us that we should never rely exclusively on any one test, any more than on the anamnesis alone."

118. **Quinin Poisoning.**—Horst describes a case similar to one reported by Nocht in which administration of quinin brought on symptoms like those of blackwater fever, only that the blood did not pass into the urine but there were multiple subcutaneous hemorrhages and bleeding from the gums. This hemorrhagic diathesis returned and subsided parallel to the therapeutic administration of the quinin on three separate occasions, with an interval of two years.

122. **Obstetrics in Wartime.**—Ausems says that he has always preached the advisability of a milk and vegetable diet for pregnant women. This avoids the danger of eclampsia while the fetus does not grow so large as when much meat is eaten. He does not approve of the Prochownick method of dieting as this weakens the woman, while the size of the fetus is not limited by it and labor is not shortened. But the long prevailing war scarcity of meat, fats and sugar has forced women to the simple milk-vegetable diet he has always advocated, and obstetricians are unanimous in extolling its influence on labor. Delivery is brief, and the fetus a little below the average size, but born in good condition by rapid labor. "The uterine contractions were more vigorous and delivery proceeded more rapidly and easily on this compulsory restricted milk-vegetable diet," he reiterates, "than when the women sat by the fleshpots of Egypt."

Ugeskrift for Læger, Copenhagen

Oct. 3, 1918, **80**, No. 40

125 *Induced Pneumothorax for Lung Gangrene. F. Tobiesen.—p. 1577.
126 *Influenza. V. Erlendson.—p. 1581; T. Wernøe.—p. 1584.
127 Recent Literature on Pathologic Anatomy of Influenza. E. Begtrup.—p. 1586.
128 The Pneumococcus and Influenza. R. Nielsen.—p. 1592; V. Bie. —p. 1595.

Oct. 17, 1918, **80**, No. 42

129 Technic for Blood Platelet Count and its Significance. H. C. Gram.—p. 1651.
130 Antistreptococcus Serum in Treatment of Influenza. C. U. Maaløe. —p. 1659.

125. **Induced Pneumothorax in Treatment of Gangrene of the Lung.**—Tobiesen reports the case of a young man who developed a gangrenous process in the apex of one lung from aspiration of septic material. A large cavity resulted, but under artificial pneumothorax conditions were restored to clinically normal in the course of a few weeks. Under any other treatment months would have been required to accomplish the same result, if it could have been realized by other means. In another case a man of 46 developed a gangrenous focus of unknown cause and it kept constantly spreading by small foci. No benefit was derived from the attempts to induce artificial pneumothorax as adhesions, etc., counteracted these attempts. He reviews the scanty literature on pneumothorax induced for other than tuberculous processes.

126. **Influenza.**—Erlendson reports two cases of influenza in which symptoms of heart block developed the second and the eighth days of influenza, and several weeks elapsed before the earning capacity was regained. In several soldiers pleurisy developed as a complication of the influenza.

Wernøe reports three cases of paraparesis as a complication of what he calls *spansk Syge* in two men of 53 and 57, and a woman of 40. The latter is known to have a tendency to hysteria.

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THE VALUE OF MODERN BLOOD CHEMISTRY TO THE CLINICIAN *

ALEXANDER O. GETTLER, Ph.D.
Assistant Professor of Chemistry, University and Bellevue Hospital Medical College; Pathologic Chemist, Bellevue Hospital

AND

A. V. St. GEORGE, M.D.
Pathologist, Bellevue Hospital

NEW YORK

The investigation of the chemistry of the blood during the past decade has brought us somewhat nearer to the elucidation of certain clinical problems. We know considerable of the etiology of diseases and still more of their end-results, their pathology. But as to the chemistry of their development and progress, little is known. Particularly is this true of the so-called endogenous, or, perhaps more correctly, the metabolic diseases. It is in the latter group that the most satisfactory chemical results have been obtained.

Certain metabolic alterations, notably the elimination of the catabolic products, are definitely determinable by laboratory methods; and no matter how divergent may be the views on points such as technic, interpretation of results, and consideration of normal or of physiologic factors varying the normal, the findings are valuable as indicating the nature of the disturbances in the process of the abnormal production or of the elimination of waste products. As to the actual seat of the disturbance in the body, one can but accept the results of blood and urine examinations as a link in the chain of evidence; and especially is this true of the early and the unusual or irregular cases of nephritis, cardiac or vascular disease.

In the chemical laboratory at Bellevue Hospital several thousand blood determinations are made annually, and embrace practically all disease conditions. From July, 1915, to April, 1917, approximately 15,000 analyses were made by one of us (Gettler) or under his direct supervision, and it is on some of these figures that our study, commenced a year ago, is based. We have examined all the charts and clinical records of these patients and, when available, the postmortem findings. Publication of the tables has been withheld because of the large space needed for them. Soon, however, we recognized the futility of attempting to group disease processes according to blood findings, with perhaps the exception of those diseases attended by disturbances in renal function, that is, the excretion of waste products. It might be of value to determine the blood constituents in patients afflicted with such comparatively mild diseases as gastritis, or even more severe conditions, such as the pneumonias, etc.; but as a routine procedure, we do not believe that blood analyses, as now practiced, furnish definite ideas unless the individual has some complicating condition in his excretory apparatus. For example, we have a large number of determinations on pneumonia patients, many of them under 30 years of age. The greater number of these cases show no definite retention, even in the chlorids, though the latter, as was pointed out by Carter, are not uncommonly diminished in the urine. In those cases in which there was retention of the nitrogenous products, there usually was an accompanying renal involvement, brought about by toxic products affecting the kidneys. We can safely assume, therefore, that the complicating nephritic lesion was the prime cause of this retention, and not the pneumonia. In those cases in which there was no note of any accompanying renal or cardiac lesion, perhaps some undetermined complication was present. The same applies to other diseases, not only of the respiratory system, but of other parts. Among these, acute yellow atrophy, exophthalmic goiter, syphilis, intestinal obstruction, pernicious anemia, diabetes with coma, fever, persistent vomiting, acute hemorrhage, esophageal stenosis, toxemias of pregnancy, septicemia and streptococcic meningitis were often found to have a slight rise in nonprotein nitrogen, but not in every case.

From the fact that so many disease conditions show a slight rise, we have attributed the cause to four factors:

1. Retention due to impaired kidneys (permanent nephritis; transient, by toxic substances).
2. Retention due to impaired circulation.
3. Abnormally large production, by the breaking down of body protein.
4. Increased intake of nitrogenous material.

In other words, the possibility of complications involving one or another of the metabolic functions of an organ, even if only of a transitory character, and especially if it involve the cardiorenal system, is always to be borne in mind before arriving at any conclusions on blood findings.

We concluded, therefore, that routine studies are of value only in such cases as nephritis and cardiac disease, and in cases of diabetes, furunculosis, carbuncles and gout; and it is primarily on these conditions that we desire to report, although a few others are perhaps worthy of mention. No attempts were made to study these patients on any of the special forms of diet. The blood was usually taken thirty-six hours

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* From the Department of Pathology, Bellevue and Allied Hospitals, Dr. Douglas Symmers, director.

after admission to the hospital, and after the patient had been on the restricted hospital diet, which is low in its protein content. The technic employed is the same as is now in general use. The values taken as normal are given in Table 1.

TABLE 1.—VALUES TAKEN AS NORMAL

	Mg. in 100 C.c.
Nonprotein nitrogen	From 25 to 40
Urea nitrogen	From 10 to 18
Creatinin	From 0.1 to 0.8
Uric acid	From 0.5 to 3.0
Sugar	From 60 to 110
Alkali reserve	From 53 to 80%

When the chief excretory organ, the kidney, becomes impaired and fails to eliminate the waste products, it is obvious that the degree of retention of these products may be of value in diagnosis and also in prognosis; and more particularly is this true of early cases, as is shown by numerous examples of the following description:

A patient, aged 50, with negative family and personal history, had lived a normal, quiet life, with no excesses in diet, alcohol, exercise, etc. Examination revealed a slightly accentuated aortic second sound, but was otherwise negative. The systolic blood pressure was 135 and the diastolic 95. The urine was pale, straw colored, with a specific gravity of 1.008, and with occasional hyaline casts, but was otherwise negative; the average amount was 2,000 c.c. a day. The blood findings on restricted diet showed nonprotein nitrogen, urea and creatinin somewhat increased. The functional kidney tests were negative.

It is this type of case that bears watching and care. Whether we wish to ascribe these cardiovascular, nephritic and degenerative processes to one of several etiologies, or, for lack of better knowledge, are willing to accept the view expressed by Bishop, that it is a general "poisoning" of all the cells of the body, we know this much, that the majority of such patients are definitely aided by restriction of their nitrogen metabolism and by calling on the accessory avenues of excretion. Definite improvement is noted by a simple subjective and objective examination, and can be measured in figures by a study of the blood chemistry.

NEPHRITIS

Nephritic cases, which include only primary nephritis, form the largest and most interesting group in our series. It is obviously impossible to list all of our cases, as they run into hundreds. Therefore, we are giving only the range between which our values lie (Table 2).

TABLE 2.—RANGE OF VALUES IN NEPHRITIS, TAKEN FROM 600 DETERMINATIONS

Nonprotein nitrogen	From 40 to 460 mg. in 100 c.c. of blood
Urea nitrogen	From 20 to 375 mg. in 100 c.c. of blood
Creatinin	From 2 to 42 mg. in 100 c.c. of blood
Uric acid	From 3 to 17 mg. in 100 c.c. of blood
Sugar	From 75 to 160 mg. in 100 c.c. of blood
Alkali reserve	From 40 to 75 per cent.

Because of the unsettled renal nomenclature, we have used in our conclusions the old classification of nephritis, that is, acute parenchymatous nephritis, chronic parenchymatous nephritis, and chronic interstitial nephritis.

Conclusions.—1. All the waste nitrogen products, nonprotein nitrogen, urea, creatinin and uric acid, are present in increased amounts in cases of true nephritis, and generally, but not invariably, present in greater concentration in the blood of those cases which are primarily considered as chronic interstitial nephritis (retention nephritis). This finding is in agreement with the results of practically all workers.

2. The degree of retention (when taking into account the functional efficiency of the cardiac muscle) is a direct criterion of the severity of the lesion.

3. We agree with Hopkins and Jonas that the sugar content in the blood is similarly increased in nephritis, and, at least in our cases, more marked in the patients suffering with the chronic parenchymatous form of the disease.

4. The alkali reserve is a valuable index of the degree of acidosis present. In our table, it runs considerably lower in the interstitial type of the disease. We would suggest that particular attention be paid to cases with low alkali reserve, as it becomes an important factor in the early recognition of uremia.

5. While we are not presenting figures, in attempting to correlate the clinical findings with the postmortem picture, we agree with Frothingham that there is no definite lesion of nephritis referable to a certain clinical picture. In other words, all the clinical and laboratory evidence in a nephritic patient may point to a certain form of the disease, but the postmortem examination is often not in agreement with the diagnosis made during life.

CARDIAC CONDITIONS

In our cardiac group we have included only those cases having primarily a true endocarditis or myocarditis, regardless of minor secondary involvements of other organs, and have eliminated all cases in which the question of primary cardiac involvement might be raised. It appears to us that the problem as to whether a person with heart disease has a complicating true nephritis, a nephrosis, or merely a renal congestion cannot be determined by chemical examination of the blood. The action of the heart, which is dependent on at least three important factors, namely, the condition of the heart muscle, the state of the nervous mechanism of the heart, and the peripheral influences under certain conditions, requires further study and more accurate physical methods of measurement before we can hope to establish its mechanical efficiency definitely.

TABLE 3.—RANGE OF VALUES IN CARDIAC CONDITIONS, TAKEN FROM ABOUT 350 DETERMINATIONS

Nonprotein nitrogen	From 35 to 220 mg. in 100 c.c. of blood
Urea nitrogen	From 18 to 180 mg. in 100 c.c. of blood
Creatinin	From 1.5 to 12 mg. in 100 c.c. of blood
Uric acid	From 2.5 to 7 mg. in 100 c.c. of blood
Sugar	From 70 to 135 mg. in 100 c.c. of blood
Alkali reserve	From 48 to 75 per cent.

A glance at the values of cardiacs (Table 3) presents nothing of interest except that in general the nitrogenous waste products in cardiac patients do not tend to accumulate in the blood to as high a degree as they do in nephritics; but this varies within wide limits in individual cases, many nephritics running even lower than cardiacs, and there are not a few cases of simple hypertension or hypertension accompanied by some minor change in the cardiac cycle that show no change in the chemical blood picture. Whether or not this retention is solely because of a poor heart muscle, or whether some slight nephritic change is responsible, is a matter still open to question. Judging from our necropsy experience, the hypothesis first expressed appears to be able to cause this retention.

Lewis,[1] Barcroft[2] and others have indicated the importance of studying the volatile and nonvolatile acid content of the blood, particularly in those cases which, for want of a better term, we may signify as cases of cardiac dyspnea. The subject as yet is too complicated to allow of conclusions, but it is worthy of further study.

GOUT

Our arthritic group contains only cases of gout.

TABLE 4.—RANGE OF VALUES IN ARTHRITIC GROUP (GOUT), TAKEN FROM ABOUT 120 DETERMINATIONS

Nonprotein nitrogen	From	30	to	55	mg. in 100 c.c. of blood
Urea nitrogen	From	15	to	35	mg. in 100 c.c. of blood
Creatinin	From	1	to	2.8	mg. in 100 c.c. of blood
Uric acid	From	1.5	to	8.5	mg. in 100 c.c. of blood
Sugar	From	85	to	140	mg. in 100 c.c. of blood
Alkali reserve	From	50	to	80	per cent.

Conclusions.—1. Our cases of gout as a general rule show some increase in the uric acid content of the blood, though some of the chronic cases were within normal limits from this standpoint.

2. The increase is more marked in the acute type of the disease.

3. Our findings are in agreement with Folin and Denis' statement that the uric acid content of the blood in cases of gout is abnormally high without a corresponding increase in the nonprotein nitrogen products of the blood; but the majority of our cases showed a slight but constant increase in the nonprotein nitrogen and creatinin.

4. We believe, as do McClure and Pratt, that an increase of uric acid in the blood, with the patient on a purin-free diet, may be a symptom, but is not diagnostic, of gout.

DIABETES, FURUNCULOSIS, CARBUNCLES, HYPERTHYROIDISM

An increased sugar content of the blood has invariably been found in the untreated cases of diabetes mellitus even without glycosuria. The onset of this condition can be detected in the blood a long time before sugar appears in the urine. It is now well known that because of the variability shown by many kidneys as to their sugar permeability, it is of greater importance to have a blood sugar determination than a determination of the urinary sugar content. The alkali reserve in these cases is also of inestimable importance in diagnosing the degree of acidosis.

The range of values of sugar in diabetes, taken from 800 determinations, has been from 105 to 1,010 mg. in 100 c.c. of blood; the alkali reserve, from 60 down to as low as 7 per cent. Similarly, there have been isolated reports of slightly increased amounts of sugar in furuncles, carbuncles, etc. In our experience, covering some fifty cases of carbuncles and furunculosis, all of severe grade not presenting the symptoms of diabetes mellitus (that is, polyphagia, polyuria, loss of weight and glycosuria), there invariably has been a hyperglycemia, some only of a slight degree, but nevertheless quite definite. It was surprising to see how rapidly these patients improved when they were placed on a carbohydrate-poor diet, in addition to local surgical treatment.

Cases of hyperthyroidism almost always show an increased sugar content of the blood. We believe, however, that this is of little pathologic significance, except that it indicates that the patient's metabolism is on a higher level than in a normal person, and that his reserve carbohydrate is being burnt up; hence the rapid loss of weight so frequently seen in these individuals.

SURGICAL RENAL LESIONS

While as a rule the functional kidney tests furnish us with clearer data in the so-called surgical kidney (multiple abscesses of the kidney, tuberculosis of the kidney, stone, etc.), it may be advisable, especially in elderly patients, to examine the degree of retention of their waste nitrogen products, for they will furnish, as Squier[3] pointed out, a guide to the operability of the individual.

ECLAMPSIA, PERNICIOUS VOMITING, ACUTE YELLOW ATROPHY OF THE LIVER, ETC.

In eclampsia, pernicious vomiting, acute yellow atrophy of the liver, etc., blood figures are of some value again, as indicative of the severity and progress of the lesion, and the same applies to those cases of poisoning which set up a destructive process in the organs of elimination (kidney and liver), for example, mercuric chlorid or arsenic poisoning. However, it must not be overlooked that in such cases of acute mercurial nephritis, we may have an enormous retention which may suddenly disappear, the patient recovering. While to our knowledge such patients have not been followed over a long period of years so as to determine their subsequent course, they are nevertheless apparently perfectly well several years later.

Blood studies on nervous diseases, such as the dystrophies, muscular atrophies, the psychoses and in cretins, have also been made, but results are not yet ready for publications.

GENERAL CONCLUSIONS AS TO VALUE OF BLOOD CHEMISTRY

So much has been written to date on blood chemistry, divergent views often being presented, that the clinician is at sea as to its clinical value. The question before him is, "What does it all mean?" As a result of some 15,000 determinations, the largest ever reported, we conclude that:

1. Kidney function may be ascertained by the increased values of nonprotein nitrogen, urea nitrogen, creatinin and uric acid; that is, whether a derangement in the elimination of the waste nitrogenous products exists.

2. The severity of this derangement can be ascertained.

3. Prognosis can be determined.

4. Hyperglycemia can be detected with certainty by the increased value of the blood sugar content, even in the very earliest stages of diabetes, when the urine is still free from sugar. It is advisable, therefore, to have a blood sugar determination made, even if no diabetic symptoms are apparent.

5. Acidosis and its degree can be determined by the decreased value of alkali reserve of the blood, as measured by the Van Slyke carbon dioxid apparatus.

6. Diagnosis in general, contrary to the views of several workers, is impossible with the blood picture alone. Only three conditions can be ascertained: First, an extremely high retention of nitrogenous substances means a renal involvement, which may be primary or secondary to cardiac; second, a high persistent

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[1] Lewis, Thomas: Lectures on the Heart, New York, Paul B. Hoeber, 1915.

[2] Barcroft, Joseph: Respiratory Function of the Blood, New York, G. P. Putnam's Sons, 1914.

[3] Squier, J. B.: Some Aspects of Renal Surgery, Surg., Gynec. and Obst., 1917, 24, 641.

blood sugar means a diabetic condition or a tendency thereto, and third, a low alkali reserve means acidosis. Small increases above normal in the nitrogenous values are not characteristic diagnostically, because we find them in scores of various conditions. As an aid in diagnosis to the entire clinical picture, blood chemistry is, of course, most valuable.

7. By reducing in the food of the patient the precursor of the particular substance found in excessive amounts in the blood, very good results are obtained. Especially interesting is this in cases of carbuncles and allied conditions. Here the blood sugar is abnormally high. By cutting down the carbohydrates in the diet the carbuncles clear up beautifully.

8. The practitioner is often met by cases with indefinite, undiagnosable symptoms, in otherwise healthy persons. A blood analysis reveals to him certain abnormalities which he can partially or wholly correct by corresponding diets, and the patients seem to feel much more comfortable, many of them remaining so indefinitely.

9. The chemistry of the blood is of particular practical importance in the toxemias of pregnancy; especially is this true of threatened eclampsia, in which the blood picture (increased amounts of nonprotein nitrogen bodies) indicates the course of treatment to be followed, so as to clear the organism of those retention products. The blood picture, according to the amount of retention, practically always is a safe guide as to the speed with which the uterus is to be emptied, thereby eliminating the focus of toxic absorption. Very often this can be accomplished even before the onset of convulsions.

10. Finally, it must not be overlooked that abnormally high values for nitrogenous waste products are not always due to kidney deficiency. When the values are only slightly higher than normal, a nonprotein nitrogen of from 50 to 60 mg. in 100 c.c. of blood may be due to an abnormally high destruction of body protein or a deficient circulation. In those cases in which the nonprotein nitrogen is very high, 80 or above, in our estimation, the only cause is kidney involvement.

Our fat and cholesterin experiments are in progress and will be reported at a later date.

Puerperal Sepsis in New York City.—According to the *Monthly Bulletin* in New York City during 1917 there were 141,564 births, of which 94,039, or 66.4 per cent., were reported by physicians, and 47,525, or 33.6 per cent., by midwives. Septicemia as a cause of death following childbirth was reported on 238 certificates, or 0.016 per cent. On investigation it was disclosed that 78 of these deaths occurred from sepsis following full time, normal labor; 33 were from sepsis following full time labor requiring operative procedure of some sort; 127 deaths were due to sepsis following premature labor. A comparison of the work of midwives and physicians shows that the midwives with 33.6 per cent. of the births had 35.89 per cent. of deaths from sepsis, while the physician with 66.4 per cent. of the labors had 59 per cent. of the deaths from sepsis following full time labor, a proportion only slightly higher for the midwives, and low for both when the total number of births is considered. The total number of deaths of full time patients in which some operative procedure was necessary was 33, and of these only 4 occurred in cases in which midwives were in attendance previous to the operation. In labors occurring before full term there were 122 deaths from sepsis, 107 among married women, 17 among unmarried women, 2 in widows and 1 in a divorced person. Of these, 53 were reported by the coroner as "abortion" and 12 as "miscarriage."

SPLANCHNOPTOSIS: ITS CAUSE, PREVENTION AND CURE

WITH SPECIAL REFERENCE TO THE DURET-ROVSING OPERATION

GEORGE NOBLE KREIDER, A.M., M.D.
SPRINGFIELD, ILL.

PROLEGOMENON

In May, 1881,[1] Dr. Glénard of Lyons, France, made the observation that many cases of nervous diseases were accompanied by a prolapsed position of the stomach. He proved this by palpation and percussion, which were advanced by his technic to a degree hitherto unknown. He soon afterward found that the other abdominal structures were prone to prolapse, especially the transverse colon, and the right kidney. From the time of this discovery of Glénard we may very properly date an era in the development of the science of medicine.[2]

The profession of France very early recognized the importance of these observations, and we take a lively pleasure at this time of revision in bringing to light a statement made by Fereal, at a meeting of the Hospital Medical Society, Paris, Dec. 24, 1886. After discussing neurasthenia and enteroptosis, he thus proceeded:

> The studies of Glénard confirm the exactitude of the anatomic-physiologic ground which served for the basis of his studies. As to the application of these principles to pathology we must render homage to the original quality which the author has shown in their supposition. Glénard's language shows that he has profound faith and absolute conviction in the correctness of his views, and this is probably the secret of his therapeutic success.
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> However we may think, French medical men, especially, should acclaim the new ideas emanating from Glénard, and not wait to give them welcome when they may be returned to us from the other side of the Rhine with a borrowed name.

SIGNIFICANCE OF PTOSIS NOT APPRECIATED

I am inclined to believe that the medical profession has not yet appreciated the importance of ptosis of the abdominal organs, or the success of the treatment of these conditions; and it is my object in this paper to call renewed attention to this subject.

Medical men seem prone to overlook the simple and obvious, and to delight in theorizing and speculating as to the cause of obscure disease. This is particularly true regarding neurasthenia and gastroptosis. Hundreds—yes, thousands—of women have been condemned to a miserable existence as hysterics or neurasthenics, who could be relieved if their abdominal ptosis were considered and relieved by bandages or operation. Rovsing says when the day for revision arrives nearly all the so-called nervous affections of the stomach will be found to be ptosis of the stomach. He makes a sharp distinction, which may not be justified, between cases occurring in the virgin, and in the married woman who has undergone several confinements.

THE SYMPTOMS OF GASTROPTOSIS

These patients, when they come for examination, usually exhibit the following conditions:

1. Emaciation.
2. Constipation, or diarrhea alternately with constipation.
3. Nervousness.

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[1] Note that the date of Glénard's first publication is 1881, not 1883, as usually given.

[2] Glénard: Semaine méd., 1886.

4. They have pains coming on after being on foot several hours, and relief by lying down or by support of the hands or the bandages. These pains are not relieved by lying on the side.

5. Very often there is pulsation of the abdominal aorta, visible especially when in a standing position.

6. There is usually vomiting.

THE GLÉNARD SYNDROME

The Glénard syndrome has been expanded in the course of the years until it now embraces more or less completely the following:

A. 1. Splanchnoptosis.
   2. Gastroptosis.
   3. Enteroptosis.
   4. Coloptosis.
   5. Floating kidney.
   6. Floating liver.
   7. Floating spleen.
   8. Mobile colon.
   9. Hernias of all kinds.
   10. Descensus diaphragmi.
   11. Descensus cordis.
   12. Varicocele.
   13. Hemorrhoids.
   14. Intestinal adhesions, kinks, etc., causing chronic constipation, intestinal catarrh, ulcers and strictures.
   15. Prolapse of the female genital organs.

B. All nervous and mental disturbances resulting from the foregoing, such as neurasthenia, nervous depression and simulated heart disease.

These subdivisions are intimately related, and all deserve consideration; but our present study must be limited almost entirely to prolapse of the stomach and the large bowel. The possible causes of these conditions will be enumerated; the prevention of them will be considered; and some of the measures, physical and surgical, which have been devised for improving pathologic conditions will be detailed.

SHORT STATEMENT OF TOPICS

Much has developed since Glénard first promulgated his fundamental ideas. The one great instructive factor has been the roentgen ray; and from it we have learned that:

1. Only occasionally the stomach is seated in that portion of the abdominal cavity which old theory and anatomic textbooks provided for it. The same is true of the transverse colon.

2. Both sexes and all ages are prone to have displacement of these organs, but females over 30 are afflicted in proportion to males as 4:1.

3. Improper habits of eating and rushing to active labor after meals are probably conducive to prolapse.

4. The corsets and constricting belts of young girls cause weakness of the abdominal muscles, which fail to support the stomach and bowels.

5. High-heeled shoes and insufficient clothing of women are causing muscle strain and congestion of the abdominal contents.

6. The now fashionable constricting leather belts are working similar results in young men.

7. While it may seem to be true that some people have prolapsed organs without symptoms, it is probably much the same condition of affairs that exists when a loop of a bowel is in a hernial sack outside the natural cavity This is always highly interesting and possibly dangerous.

8. There has been a complete change in our conception of the ordinary forms of colitis, and we now believe that these diseases, formerly considered of nervous origin, are primarily not nervous.

9. Many cases of abdominal prolapse can be cured by proper bandaging, posture and dieting, and no operative procedures should be attempted until these simple means have been tried. Especial warning should be given at this point, else we shall have operating perverts bring disrepute on this operation, as they have on appendectomy, etc.

10. Lane's plan of resecting large portions of bowel is only exceptionally necessary, and probably, when the proper attention is given to the early stages of intestinal disease, it will never be done.

11. Operations attaching the stomach and intestine to the abdominal wall are capable of giving good results, even if there are theoretical objections to their employment. Duret of Lille first performed a gastropexy with excellent results, but, unfortunately, this was not appreciated, and it remained for others to develop this operation, notably Rovsing of Copenhagen. My experience would seem to indicate that the operation is not difficult, and can be carried out in patients desperately emaciated, and that good results are often obtained.

12. Infections of the sinuses, teeth and tonsils are, in a great many cases, the cause of that "weakened condition" so often mentioned by authors. This "weakened condition" is responsible for the loss of tone of the muscles of the abdominal wall. The detection of these infections is best obtained by the roentgenogram.

RESTATEMENT AND AMPLIFICATION OF TOPICS

1. *Position of Stomach and Transverse Colon.*—The stomach and transverse colon seldom lie in ideal position. The revelations of the roentgen ray certainly came as a distinct surprise to the older surgeons who had been taught anatomy on the old lines. The illustrations of the more recent textbooks are misleading in this matter. The revelations of the fluoroscope and the roentgenogram are so uniform that we feel amply justified in the statement of the infrequency of the normal position of these organs.

2. *Sex and Age.*—Both sexes and all ages are affected, according to Albu. It seems that even newborn infants are prone to ptosis of the abdominal organs, and, strangely enough, girls are more prone to this condition than boys (11 per cent. boys and 44 per cent. girls).

Again, the aged are particularly prone to prolapses, owing to the bad habits of youth and middle life, to be detailed later.

Stiller[3] says that the Jewish and Slavic races are more prone to the affection than other races, and that residents of cities suffer more than country people.

3. *Habits of Eating.*—Improper habits of eating and failure to rest after meals conduce to prolapse. Any one who observes the daily life in the business centers of our large cities must be impressed with the rapidity with which food is devoured, washed down, usually, with copious drafts of ice water and topped off with ice cream or indigestible dessert. We cannot wonder that the overloaded stomach refuses to act, and "falls down" on the job. For a number of years, I was consulted by many trolley men and conductors on a large electric line who complained of dyspepsia. I

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[3] Stiller: Berlin. klin. Wchnschr., 1909, 1905, 1899.

found that these men carried, in their buckets, cold, indigestible foods, which they consumed while attending to their exacting duties. That the stomach rebelled was not remarkable.

A country physician's wife, to save her husband annoyance at mealtimes, answered all his telephone calls. Immediately the meal was finished she hastened to prepare her house for any patient who might appear, causing considerable physical and mental agitation during the mealtime and no rest afterward. The result, as might be expected, was a dilated and ptosed stomach. The complication in this case was an ethmoid sinus disease.

4. *Corseting of Young Girls.*—While there has been a certain amount of improvement in the construction of corsets, yet I believe it remains true that the tendency of these "straight jackets" is to squeeze the waist line and interfere with the proper functioning of the abdominal muscles, and thereby the natural support of the abdominal wall is lost. The weight of clothing, held in place by tight bands and strings at the waist line, often adds to the difficulty.

When a girl who has followed this custom comes to her pregnancy she has little muscular support for the wall; and she often supplies this by additional corsets and bandages. When the pregnancy is terminated, the muscles are permanently stretched and weakened, the abdominal contents drop, the uterus sags, varicose veins develop in the legs, hemorrhoidal veins of the rectum become enlarged, and she may became a neurasthenic invalid. All authors agree in laying an indictment against the corset.

5. *High-Heeled Shoes, High-Cut Skirts, and Insufficient Clothing.*—These are causing strain on the muscles and congestion of the abdominal organs. No argument is necessary to prove this.

6. *Clothing of Young Men.*—Suspenders are no longer fashionable for men. Warm underclothing is no longer fashionable. Thin-soled shoes, and no overshoes to protect the feet from cold and dampness, are the vogue. All these tend to ptosis of the abdominal organs. Should we not sound a note of warning?

7. *Prolapsed Organs Without Symptoms.*—We hear and read a great deal about persons having splanchnoptosis without knowing it. This may be true, but much in the same sense that we occasionally find individuals, even doctors of medicine, running around with loops of bowel in both inguinal canals, or even in the scrotum, doing their ordinary professional work. Our duty in such cases is always to warn of impending trouble, and to endeavor to correct the deformity and relieve the conditions causing it. To keep silence is sure to send the patient to an osteopath or a Christian scientist for relief of obscure pains, supposedly in the spinal column, on the one hand, or in the certainly weakened brain, on the other.

8. *Colitis.*—This is no longer to be considered a disease of nervous origin. In a recent work, Osler speaks of "true mucous colitis as a secretion neurosis of the large intestine, met with, particularly, in nervous and hysterical patients. Sometimes there are attacks of nervous diarrhea."

Niemeyer, in 1911, said:

> It is noticeable that the patient is almost always a nervous, hysterical or hypochondriacal individual. The noticeably frequent association of the disease with hysteria and neurasthenia seems to indicate nervous causes for the exaggerated production of mucus. The course of the disease depends on the character of the food taken, and the other nervous symptoms present. The treatment is local and chiefly for the care of the associated neurasthenia.

We believe that modern developments have shown these statements to be absolutely the reverse of true. We believe that the bowel condition usually caused by ptosis of the organs is the primary condition, and that the nervous and mental symptoms are the result. When the enteroptosis is relieved, the nervous and mental symptoms gradually disappear. In this connection it might be well to introduce the historic case of Sir William Treves, cited by Osler, as a case in which laparotomy was resorted to as a medical measure with alleged perfect results.

In a work published in 1898, Mr., now Sir., Frederick Treves[4] wrote:

> An unmarried lady of 30 consulted me with what she was assured was a stricture of the colon. She had the persistent pain and a very marked tenderness at a spot just above and to the left of the umbilicus, to which I have just referred. The stricture was supposed to be situated at this spot. She had frequent vomiting, which appeared in attacks. The vomited matter was small in amount and usually intensely acid. Her bowels were confined, and she described her motions as containing many strange and wondrous things. An examination of one of these remarkable stools revealed nothing unusual, except much undigested food and much mucus. The patient was thin and pallid. She was too weak to follow any other engrossing pursuit, but she had made a great study of her malady. The abdominal pain had begun ten years previously, and since that time she had had manifold illnesses. She had written out an account of these disorders with much care. They seem all to have been of an acute and exceptional character, and included malignant sore throat, internal abscess, spinal exhaustion, neuralgia, and certain smaller troubles. She had had uterine affections of bewildering complexity. She spoke of her kidneys with precision and of her liver with regret. The former organs were prone to unreasonable congestion, and the latter to an obstinacy which appears to have been little short of intelligent. She had been to many health resorts, and had taken medicine for the ten years concerned. She was certainly feeble, anemic, and intensely neurotic. The abdominal pain was, at times, agonizing; and her friends were driven to desperation by an illness which seemed unending and filled with tortures. The abdomen was flabby and revealed nothing beyond a general ptosis of the adbominal viscera of moderate degree.
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> The kidneys were both slightly movable. As all medical measures had failed, as the patient was leading the miserable life of a chronic invalid, and as her friends were becoming convinced that "she must have something wrong," I consented to make an abdominal exploration. I found a general prolapse of the viscera of moderate but distinct degree; the stomach was perhaps a little dilated, but beyond this every organ in the abdomen was perfectly normal. The intestine was closely examined from the duodenum to the sigmoid flexure; it was perfectly normal.
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> The exploration cured the patient of all her abdominal symptoms, even of the vomiting, and of the pain which had troubled her for ten years. I think it possible that the ptosis of the mass of intestines may have hindered the passage of food from the stomach in a trifling degree.
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> This case, therefore, was one of uncomplicated visceroptosis with nervous phenomena in a very neurotic patient. Although the patient had never worn a belt, she was always worse when she moved about, and was only comfortable when in bed. A belt was worn after the operation.

Treves repeatedly refers to the mental effect of the operation. I look on this case as a well marked splanchnoptosis, and its cure not due to the operation or mental effect at all, but to the rest in bed and appropriate bandaging afterward.

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[4] Treves, in Allbutt: System of Medicine. 1898. 3.

9. *Rest in Bed, Forced Feeding, Posture, Exercise and Proper Bandaging.*—These will relieve nearly all such cases. Usually, the first treatment required for splanchnoptosis is six weeks' rest in bed. The foot of the bed should be raised 12 inches, more or less, depending on the case. A trained nurse should be in attendance to give proper baths and massage. Since these patients are inclined to melancholy, a cheerful, hopeful nurse is essential. Much of the emaciation is due to fear of eating perfectly harmless foods, and they must be urged to eat, even if it causes gastralgia. The stomach has been lazy and must be forced to work. At least five meals a day must be taken. It is usually not desirable to give purgatives. A sun parlor or porch should be used if available, but the patient should be isolated from inquisitive friends or strangers. Complete mental and physical rest is necessary.

After a certain time the supporting bandage should be applied and the patient put on foot. The bandage known as the Comfort U, made for me by E. J. Fayart of Springfield, Ill., is an improved form of the supporter devised by Dr. Gallant of New York. It has certain advantages, which need not be minutely detailed. Suffice it to say that it usually supplies the required support. To this must be added rest in a reclining position for half an hour after each meal, with clothing and bandage loosened, and the foot of the couch or bed elevated. In due time light gymnastics, directed especially to improving the tone of the abdominal muscles and diaphragm, may be taken. We advise shoulders on the floor and hips on a couch, hanging by the knees on a horizontal bar, golf playing, croquet, tennis, etc. Automobile riding is usually painful and should not be permitted until the cure is perfected.

10. *Infrequent Necessity of Lane's Operation.*—Some fifteen years ago Metschnikoff pronounced the colon a useless portion of the intestinal tract. The truth of this statement has not been proved. Following this came the remarkable proposition of Arbuthnot Lane, to excise the greater part of the large bowel for all sorts of ailments. Fortunately, the profession did not hastily accept this dictum. It seems apparent now that it was too broad and sweeping. A few, but not many, patients should be subjected to the Lane operation. Careful attention to the early stages of splanchnoptosis will reduce these cases to the vanishing point.

11. *Gastropexy, First Advocated by Duret of Lille, and Promoted by Rovsing of Copenhagen.*—This operation offers in many cases a hope of relief. Having exhausted all other means of relief, and having proved by repeated studies with the bismuth meal and the roentgenograph that the ptosis exists, it is our duty to give the patient the benefit of the Duret-Rovsing operation.

Duret did a gastropexy in 1894. He reported his case to the Academy of Medicine, Paris, Oct. 2, 1894.

> The patient was a woman of 51, who was afflicted with enteroptosis, together with dilatation and dropping of the stomach to the subumbilical region. All medical treatment having failed, a gastropexy was decided on. An exploration was made for a curable pyloric lesion, and, this being absent, the stomach itself was brought up and its anterior surface fixed to the abdominal wall. The incision was made through the skin and muscle from the ensiform process to the umbilicus. The peritoneum was only opened at the lower angle of the wound, and then fixed at the lesser curvature of the stomach to the untouched peritoneal surface, high up, with a single thread which led alternately in and out through the serosa covering the stomach and the parietal peritoneum. As a result of this simple procedure the stomach and intestinal functions were regulated, and the patient increased notably in weight. The stomach-splashing disappeared below the umbilicus, which proved that the fixation was complete. No roentgenoscopy was available at this date. Some neurasthenic symptoms remained for a time, but later entirely disappeared.

This observation showed that old cases of stomach prolapse could be greatly benefited by a simple operation, and the majority of the distressing symptoms would disappear. At a later session of the Academy (March 19, 1895), Professor Le Dentu reviewed the paper. Le Dentu expressed the opinion that fixation of a hollow organ, like the stomach or intestine, would have no influence on the symptoms, immediate or remote, depending on the mobility or ptosis of the organ. Besides, gastroptosis rarely exists alone, but is accompanied with enteroptosis, gastric ectasia, etc. In these cases gastropexy is evidently insufficient.

Again he said:

> The operation is open to two other objections. The first is that, in fastening the pyloric end of the stomach in the epigastric region, we force the organ to bend itself, the median section not being brought back to the same level as the two tuberosities. The second objection is that the formation of adhesions between the stomach and the abdominal wall is not without inconvenience; therefore the operation presents serious chances of success only when the stomach is simply displaced. Even then it is doubtful if the operation will become popular.

It will be seen that the Duret operation was damned by faint praise, and, in effect, was killed where and when it should have been given serious consideration, for the patient was cured and lived many years in comfort. It remained for Professor Rovsing of Copenhagen to develop and extend the operation and prove to the profession that, contrary to any preconceived opinion, it should be given a trial. Rovsing has shown that in Denmark more than 256 gastropexies had been done up to 1911, and that cure, or great improvement, has been obtained in from 70 to 75 per cent., improvement in 10 to 12 per cent., no change in 11 to 12 per cent., and deaths in 3 to 5 per cent. These percentages are in round numbers

DESCRIPTION OF THE OPERATION

The usual incision for the stomach operation should be made, and should at least extend from the tip of the ensiform cartilage to the region of the umbilicus. The whole abdomen should be explored at once. The appendix should be removed if found diseased; the gallbladder emptied of stones if any are present, and excised if necessary; adhesions in any part should be examined, and eliminated if causing kinking or compression; the liver, if prolapsed, should be fixed by sutures to the peritoneal covering of the diaphragm, or the ligamentum teres should be severed and stitched to the diaphragm. Usually, the transverse colon must be brought into position by passing several sutures first through the serous coating of the colon, then in and out through the layers of the gastrocolic ligament, and finally through the serosa of the stomach along the greater curvature.

In doing this, one should be careful to avoid the blood vessels of the omentum. This brings the colon up close to the stomach. We are now ready to attach the stomach to the abdominal wall. I now give the peritoneum of the stomach and of the abdominal wall a good rubbing with dry gauze to cause roughness and exudation. Rovsing advises scratching these surfaces with a needle. Three heavy silk sutures are passed in and out through the serosa, each thread parallel with the axis of the stomach. These threads are about three-quarters inch apart; one just under the lesser curvature, one three-quarters inch below this, and one 1¼ inches above the greater curvature. The ends of the threads are passed entirely through the abdominal wall, at a distance of about 1½ inches from the median line. The wound is closed in the usual manner; a glass plate about 3 by 4 inches in size, wrapped in sterile gauze, is clapped on the abdomen, and over this the stitches are tied. This, of course, is done to bring a broad, flat surface of stomach against a similar surface of the abdominal wall. These threads remain undisturbed for four weeks or until complete convalescence has taken place.

CASE HISTORIES

Case 1.—The patient was successfully treated by advice, posture, and treatment of ethmoid sinusitis. Mrs. Dr. C., housewife, of Rochester, Ill. Parents living in good health. One sister living in good health. Aged 35 years. Married. No children. First saw her, Feb. 14, 1908. Had typhoid fever in 1895; very mild attack. Bowels constipated. Menses regular. First noticed particular stomach trouble some months ago. Has had numerous attacks of indigestion, which lasted ten to twelve days. There was no regularity about these. Her husband would give her medicine, but the attacks would recur. Average weight, 150; present weight, 115. No fever with attacks. No kidney trouble. No vomiting. Seems to be extreme burning in throat and stomach, which would last four hours and sometimes much longer. If she starves seems to be better. Thinks she has fallen off, because she eats nothing.

Examination shows no tenderness over the gallbladder or in the appendical region. Prolapse of the stomach is well marked. No floating kidney. Teeth good. Tongue in fair condition. Patient states she hurries to remove dishes from the table so that the dining room would look well when patients visited the doctor. Also at mealtime she would answer telephone in order that the doctor might eat without interruption. She eats rapidly. Advise that she stop answering the telephone at meals. Let husband attend to this, as he is sturdy and strong. That she cover the dining table with a clean cloth, and lie down after meals for a half hour with hot water bag to epigastric region. Gave diet, February 21. Thirty days later she reports she has had no burning of the stomach whatever. What she has eaten seems to agree with her. Has excellent appetite. Has gained in flesh. Bowels not so constipated. Nervousness better. Tongue is very clean. Now, 1917, nearly ten years after this advice was given, she tells me that her health has been excellent and she weighs 125 pounds. Health perfect except for occasional rheumatism.

Case 2.—Gastroptosis successfully treated by posture and bandage. Paul G., aged 18, student, of Springfield, Ill. He began to show signs of failure in strength and flesh, presumably as a result of overwork at school. This was not relieved by a change of climate, but emaciation progressed until his weight became 107 or less. Thorough examination shows negative Wassermann. No tuberculosis. Heart weak. Tonsils diseased. Stomach low down in pelvis so that the stomach, filled with bismuth milk, could be felt with the finger through the rectum. The tonsils were removed under local anesthesia. The patient was put to bed for ten days with the foot of the bed elevated 16 inches. A corset was applied to hold up the stomach, which was only partly effective because of the extreme emaciation. About this time an article appeared in the *New York Medical Journal* showing a bandage designed by Dr. A. E. Gallant of New York, and one of these was fitted to this patient. Proper exercise was prescribed to improve the abdominal muscles, and after four months the patient was allowed to resume his studies. The case has progressed favorably, and the patient's present weight is 143 pounds.

Recent fluoroscopic examination shows the stomach at least 6 inches out of the pelvis. The abdominal muscles are strong, and indications are that a cure has resulted. I can highly recommend the Gallant bandage when an operation has been performed and when an attempt is made to elevate the stomach without an operation. I have prescribed at least 100 of these, and I think some 700 have been prescribed in central Illinois. A large number of patients have been benefited by this simple appliance. They are cheap, cleanly, have no rubber elastic to wear out, and in all particulars have proved satisfactory.

Case 3.—Long standing stomach ailment due to gastroptosis successfully treated by direct Duret-Rovsing separation. Mrs. Theodore D., housewife, of Springfield, Ill.; aged 44; married; height 65 inches; weight 118 pounds; has weighed 145. Father died of typhoid, aged 30. Mother living in fair health. One brother living and healthy. Husband is living and in fair health. Three living healthy children. One infant died of erysipelas. No evidence of disease in mouth or air passages.

She says her abdominal symptoms date from the time when she clerked in a retail furniture store twenty years ago. Her hours of work were long; there was little time for meals; and she hurried back after eating, taking absolutely no rest after eating. She has had chronic constipation for years. She has taken a great deal of medicine for years, and lately has been confined to bed nearly all the time. Has had many spells of a hysterical nature, and has felt she would die, and has had a fear of falling all the time. She refused to go to the hospital for treatment. Her stomach has been washed out daily for two weeks without relief. She entered St. John's Hospital, June 13, 1917. Fluoroscopic examination shows the lower border of the stomach resting on the pelvic pan. The roentgenogram shows the characteristic stocking-shaped stomach.

Urine, 1.010, normal except a trace of indol; Wassermann, ++; blood, hemoglobin, 84; reds, 5,100,000; whites, 7,800; differential, 64 and 36. She was given four intravenous injections of arsphenamin, total amount 0.90, and four deep injections of mercuric salicylate, total 40 minims; and was given also two teaspoonfuls of mistura rhei et sodae in hot water before meals. No relief from vomiting, which was of daily occurrence. Finally she was deprived of all nourishment by the mouth, and given rectal feeding only. Vomiting began again after a few days. Her weight was reduced to 96 pounds, and the outlook was quite unfavorable.

A Rovsing operation was done, July 24, Dr. Kelly assisting. An incision was made from the sternum nearly to the pubes. Marked prolapse of the liver was found, marked adhesions about the gallbladder, and marked enlargement and prolapse of the stomach and colon. There was no disease of the gallbladder or of the appendix. The other organs appeared normal, and there was no apparent ulceration or disease of the stomach. Under these circumstances it was decided to break up all the old adhesions, and to anchor the stomach in its normal position as well as possible by the Rovsing method. The anterior surface of the stomach and the peritoneum of the abdominal wall were rubbed. Two of these complete sutures through the abdominal wall were inserted. The ascending colon by stitches through the abdominal wall was anchored in nearly the normal position. Another suture was placed about the middle of the transverse colon. A third suture was not placed in the pyloric region of the stomach because of the prolapsed liver. The patient left the table in good condition.

Vomiting began again the third day after operation, and was so violent that the lower part of the incision was opened. Owing to the critical condition of the patient the small intestine, which had prolapsed through the wound, was merely pushed back, and the wound drawn together with adhesive strapping and allowed to heal by granulation. Undoubtedly, there is a considerable adhesion at this point. She left the hospital, September 16, about seven weeks after the operation.

Her recovery has been slow, but steady, and she now weighs 130 pounds, a gain of 35 pounds. Her bowels move each day without a cathartic. She has an excellent appetite. She declares herself entirely well, and seems to be.

The patient was interviewed, May 20, 1918, and seemed well in every way except for occasional nervousness.

CASE 4.—Long standing stomach ailment due to gastroptosis successfully treated by Duret-Rovsing operation. Miss Hattie H., aged 49, housewife, of Waverly, Ill., weight, 94 pounds; entered hospital, Oct. 15, 1917. Family history rather negative. Father died of kidney disease at age of 70; mother died of heart disease at age of 63. One brother died of tuberculosis; one brother suicide at age of 37; one brother died a soldier in the Philippine Islands; one sister died in childbirth; one sister living at 27 is very nervous; four brothers are living in fair health.

She has had stomach trouble for thirty years. More particularly has suffered in the last six or eight years. Always had pains after meals. The last three weeks has taken only egg water and ice cream. A prominent physician in a neighboring city thought she had gallbladder trouble, and treated her for about one year.

On entrance she was so weak that it was necessary to have a sister support her on each side to get a fluoroscopic examination of the stomach. Examination resulted as follows: Wassermann, negative.

Urine: Specific gravity, 1.030; acid; otherwise negative. Blood: 66, 29, 4, 1; reds, 4,040,000; whites, 6,600; hemoglobin, 80. Feces: no blood; no ova; no tuberculosis; no parasites. Stomach contents: mucus on top; micro, negative; food, well digested. Free hydrochloric, 25; organic, 18; total acid, 55; comp. hydro, 15.

Fluoroscopic examination revealed a ragged outline of the stomach, which fails to empty after seven hours. The bowels are much distended with gas. There is also an infiltration in the lower left quadrant of the stomach which is associated with the infiltrated liver. The heart is somewhat atrophied. The stomach shows a very large amount of gas. The lower border extends down to 2 inches below the crest of the ilium. There seems to be considerable fixation of the tissues of the abdomen. There appeared to be a large amount of fluid in the stomach besides the fluid that had been ingested with the meal.

All conditions being considered, it was thought best to suggest an operation, which was agreed to on the theory that death was better than a continuance of life under the present conditions.

Operation was performed, Nov. 3, 1917. An incision was made from the sternum to below the umbilicus. The liver seemed prolapsed. The gallbladder was examined and found empty. The appendix seemed distended, and was removed. The transverse collapsed colon was sewed to the lower border of the stomach. Three sutures were placed according to Rovsing. The liver was displaced downward and would have been attached to the diaphragm had not the patient shown symptoms of collapse. The wound was brought together, and linen threads (not too heavy) were tied over the glass plate. Two small fibroid growths on the uterus were not removed. The ligatures through the stomach were removed at the end of twenty-three days.

The convalescence was unexpectedly rapid and satisfactory. This patient was seen July 22, 1918. She is keeping house for a brother and seems entirely free of her abdominal and nervous symptoms.

ABSTRACT OF DISCUSSION

DR. CARL E. BLACK, Jacksonville, Ill.: Since we are able to make roentgen-ray studies of these cases, the number has no doubt greatly increased. If anything can be done to take these cases out of the classification of neurasthenics and hysterics, give them a real pathologic basis and put the patients on a plan of treatment which will lead to a reasonable percentage of success, great good will be accomplished. I have been watching Dr. Kreider's cases and have been led to believe that a number of these patients should be treated with the Rovsing operation. The difficulty that I have is to know how to differentiate them. It is rare that there is simply a ptosis of the stomach and transverse colon. Usually the ptosis is more extensive than that, and combined with it there is usually a history of infection, which, no doubt, in a large percentage of cases, is an underlying factor. These patients are weakened by chronic infection, and the ptosis comes on gradually and insidiously following an infection. That infection may be in the abdomen or elsewhere. In the treatment of these patients it is necessary, first of all, to clear up as nearly as possible all of the foci of infection. I have seen a number of cases where by operating on the gallbladder or the appendix, especially an old chronic appendix with many adhesions, the symptoms disappear, although nothing was done for the ptosis. Some of the most startling successes I have had were achieved by putting these patients to bed, raising the foot of the bed and keeping them there six to eight weeks, following that by the use of a belt for support after they have gained 20, 30 or 40 pounds. One man treated in that way gained 45 pounds after eight or nine months, and now appears to be perfectly well. In that case the difficulty was largely aggravated by a bad habit of taking a quart or more of water the first thing in the morning. He seemed to think that he must drink water by the quart because he had certain digestive symptoms which undoubtedly aggravated his condition.

DR. GEORGE P. MÜLLER, Philadelphia: Dr. Kreider uses the term splanchnoptosis to cover the symptomatology of the type of cases referred to in his paper, and apparently advocates its treatment by suspending the stomach by the Rovsing operation. I believe it is necessary to take a more comprehensive view of the subject and to understand and distinguish between ptosis of the stomach, colon, kidney, cecum, etc. I believe that in the majority of cases the various types of visceroptosis are of congenital origin, and are not acquired by the wearing of tight corsets, high-heeled shoes, by faulty teeth, etc.; while these may bring on the symptoms due to the ptotic state. Some patients have ptosis of certain of the abdominal organs with gastric symptoms. Obviously, it is necessary to know whether the ptotic stomach per se is causing the gastric symptoms, or whether these are reflex to a retroverted uterus, to a mobile kidney, etc. I do not think much of the Rovsing operation, but prefer the Beyea operation, properly performed, and, in any event, do not do these operations unless careful roentgen-ray studies have shown that the ptotic stomach is of the so-called water-trap form, and is causing the symptoms from which the patient suffers.

DR. GEORGE N. KREIDER, Springfield, Ill.: I ask you to make in your nervous cases an *observation* of the stomach with the fluoroscope or roentgenograph, and you will get many surprises by finding that ptosis lies at the base of many nervous troubles, which are absolutely cured by this simple operation, or better still, without operation. I said distinctly, "Never operate on these patients if they can possibly be helped otherwise."

Reclassification of Athletics.—In a word, all branches of athletics must be reclassified on the basis of their effects on the heart and other vital organs, and we must discard the old classification based on popularity and commercial advantage. In the grammar school the form of athletics to which a boy could be assigned or which he would be permitted to engage in would depend on (1) his family history; (2) his personal history, having regard especially to previous illnesses endured; (3) his physical status; (4) his particular type, height, weight, etc., in relation to age, etc. Every class would have its specially prescribed athletics, both physical and tactical, and under no circumstances would a lad be allowed to engage in competitive sports assigned to a class above or below his own. A physical examination would mark his entry to and exit from a class and he would be marked for development of body and for ability to perform the various tactics. While in the grammar school a chart would be begun for him which would accompany him throughout his educational career.—Lieut. D. F. Luby, *Naval Medical Bulletin*, October, 1918.

COMPARATIVE VALUE OF IPECAC AND ITS ALKALOIDS IN TREATMENT OF INTESTINAL ENDAMEBIASIS *

SIDNEY K. SIMON, M.D.
Assistant Professor of Clinical Medicine, Tulane University of Louisiana
NEW ORLEANS

There is universal concurrence of opinion at the present time in regard to the highly specific effect of ipecac, as well as of its constituent alkaloids, on the vegetative forms of the pathogenic endameba. Though the ipecacuanha plant, and especially its root, has been employed since remote times as an empiric remedy in the treatment of many varieties of intestinal disorders, it is only within comparatively recent years that recognition of its sole and distinctive value in endamebic disease has been definitely reached.

An interesting and diversified history surrounds the earlier use of ipecac as a therapeutic agent, traceable back as far even as the beginning of the Middle Ages. It was first introduced into Europe in 1648 in the guise of a secret remedy for dysentery, having gained considerable repute originally among the natives of Brazil for its usefulness in this class of affections. The story is related that the French government, impressed by the striking results obtained in the case of the Dauphin, son of Louis XIV, then reigning, was induced to purchase the secrets of the wonderful remedy outright, for universal dissemination. In the course of the years that have since followed, reaching to the present day, ipecac, in some one of its many forms, has weathered a shifting reputation for dependability in dysenteric disturbances, being lauded and denounced in turn by various authorities in almost as many climes.

During the period immediately preceding the close of the last century, the drug had fallen into almost complete disuse, doubtless because of the disagreeable effects which so often attended its administration. In the eyes of the more careful English observers in the tropics, however, ipecac had always maintained the foremost place as an indispensable measure for combating the dysenteries of warm countries, especially in India, and it is, in fact, due largely to the earnest pleas of this school, headed by the venerable Sir Patrick Manson, that credit should be accorded for rescuing the drug within recent years from all but entire oblivion.

Some ten years ago, being impressed by the weight of this authoritative experience and especially after I had previously convinced myself of the noneffectiveness of the various measures then in vogue against the all too prevalent endamebic infections in the South, I[1] ventured to make trial of the old-time ipecac treatment. The powdered root, made into pill form, was employed for the purpose, each pill being provided with an enteric coating of salol, in accordance with a previous suggestion of Rogers. The striking results which attended the trial of this treatment in a series of about fifty cases were subsequently summarized in a report read before this Association in 1909. A short time previous, George Dock[2] was able to report equally favorable results from observations made independently in the same field. Though confirmation of these experiences was soon recorded from numerous sources, objection to the method was raised on many sides mainly on the grounds of the clinical difficulties involved in the administration of large numbers of pills at one time, many of which were found not infrequently to pass through the bowel without dissolving. Likewise, the failure to control nausea and vomiting in some patients, in spite of a liberal enteric coating of the pill, called for additional unfavorable comment. These difficulties, which even today are still not entirely under satisfactory control, served at the time to disqualify the procedure in the eyes of a considerable element of the profession. Demand was made for a less cumbersome manner of employing the curative features of ipecac without entailing such great discomfort to the patient. The answer to this demand was not long withheld. In 1911, Vedder[3] and subsequently Rogers[4] were both able to report success in the therapy of endamebic infections with the use of emetin, an alkaloid derived directly from the crude ipecac root. This substance, in the form of the hydrochlorid salt, they found to be especially adapted to hypodermic administration and only rarely was emesis found to occur with its use. Likewise its prompt action on the clinical disturbances of the disease was most striking, and within a very short time the virtues of the parent drug were all but completely overshadowed and forgotten. With the course of time, however, evidence has accumulated which has tended to throw more and more doubt on the justice of many of the early claims regarding the superiority of emetins over the entire ipecac root, especially in the control of the more chronic and intractable endamebic infections. While no question can be raised of the prompt amebicidal action of emetin on the free living or vegetative organisms, more extended opportunity for observation has made it increasingly clear that, in the matter of the destruction of the endamebic cysts, the alkaloidal therapy in many instances meets with marked failures, thereby opening the way for repeated recurrences of the infection. A recasting of the earlier and more optimistic views, especially in regard to the absolute and complete specificity of emetin in endamebic disease would therefore seem to be necessary.

INADEQUACY OF EMETIN

Vedder,[5] himself, as early as 1913, was willing to admit that "a large percentage of cases treated with emetin continued to harbor the *Endameba hystolytica* in the encysted and most dangerous form in the feces for some time." Likewise Allan,[6] Baermann,[7] Gaide and Mouzels,[8] and Marchoux,[9] each have reported in turn unfavorable results from their experience with the emetin treatment alone, claiming that "the endameba were not expelled from the intestinal tract to the degree that the relief of clinical symptoms would lead one to expect." Still more recently, Phillips[10] concluded an excellent review of the subject with the statement that "the effects of emetin are not permanent and that though the active amebia are killed off very quickly, the drug has no effect on the cysts." Again, G. I. Jones[11] says significantly; in summarizing a large number of cases placed at his disposal, that while he considers emetin a valuable agent in the treatment of intestinal amebiasis, "the use of this drug alone will not cure amebic dysentery." This author found, in fact, that relapses soon occurred and strongly urged the employment of ipecac by mouth, as a necessary step in the achievement of complete and permanent recovery. The results of these, as likewise of numerous similar observations which have been recorded in the literature with increasing frequency in recent years would seem to point unmistakably to the conclusion that, while emetin does prove of undoubted service in the destruction of the free living endamebas, it finds a greatly restricted field of usefulness in the all-important matter of the removal of the cysts from the intestinal tract.

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* Read before the Section on Gastro-Enterology and Proctology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918

[1] Simon, S. K.: Amebic Dysentery, The Journal A. M. A., Nov. 6, 1909, p. 1526.

[2] Dock, G.: Tr. Am. Soc. Trop. Med., 1909.

[3] Bull. Manila Med. Soc., 1911, **3**, 48.

[4] Therap. Gaz., 1912, **36**, 837.

[5] Vedder, E. B.: Origin and Present Status of the Emetin Treatment of Amebic Dysentery, The Journal A. M. A., Feb. 14, 1914, p. 501.

[6] Allan, W.: The Emetin Treatment in Amebic Dysentery, The Journal A. M. A., March 1, 1913, p. 664.

[7] Baermann: München med. Wchnschr., 1913, **60**, 1132.

[8] Gaide and Mouzels: Bull. Soc. path. exot., 1913, **6**, 491.

[9] Marchoux: Bull. Soc. path. exot., 1913, **6**, 313.

[10] Phillips, L.: Brit. Med. Jour., 1914, **2**, 1061.

A close analogy exists, in fact, between the *Endameba histolytica* and the malarial hematozoa in the matter of their behavior to specific medication. Both organisms, in common with protozoa in general, exhibit two separate and distinct phases in their life cycle, including a free living or vegetative stage of existence which permits of free locomotion enabling the cell to obtain its nutriment, and a second state in which the vital activities of the cell are found in abeyance within the enclosure of a cyst wall (the so-called gamete). It is only in the latter state that infection is conveyed from host to host, since the vegetative organism is prone to succumb or to undergo encystment when removed from its original environment. The pathologic conditions arising in the human organism are, however, the sole result of the vital manifestations of the free living protozoon. In its encysted state the organism lies dormant, incapable of tissue harm, but offering marked resistance to external influences. It is most important to understand, in this connection, that the protozoa, once having become encysted, have acquired thereby an increased resistance to their specific drug, in sharp contrast to the ease with which the organism in its vegetative state may be reached and destroyed in the same dosage. In fact, relatively small amounts of the specific drug, instead of killing the organism outright, will often induce the obverse effect of driving it into encystment. While the immediate clinical symptoms are promptly relieved by such a process, the difficulties surrounding the complete eradication of the infection are largely increased. In regard to malarial infections, the fact has already been well established, that relatively small amounts of quinin tend to encourage the formation of gametes. Similarly, in endamebic disease, unless appreciably large doses of ipecac or of its alkaloids are employed, the free living organism seeks protection against the toxic action of the drug by enclosing itself within a cyst wall.

In the dosage found necessary for the complete overwhelming of the offending organisms, consideration must be given to the matter of the toxicity of the drug itself on the human host. While the crude ipecac, in amounts as high as 75 grains in daily doses repeated over a period of ten days, has been found singularly devoid of toxic effects, experience has shown that the alkaloids, in an equivalent dosage, possess no such immunity.

RESULTS OF INVESTIGATIONS

As far back as 1817, investigations into the pharmacology of ipecac had been made by Pelletier,[12] a French chemist. Pelletier believed that the root contained but one alkaloid, to which the name emetin was applied as a fit designation for the emetic properties exhibited by the drug. It was not until 1894 that Paul and Crownley[13] were able to show that the root contained a second active alkaloid, to which the term cephaelin was given. Subsequently, still another alkaloid, psychotrin, has been identified and it is not improbable that the future may reveal the presence of yet another derivative. In 1895, Wild[14] made an exhaustive study of the poisonous effect of both emetin and cephaelin on the human organism, as well as on some of the lower animals. Numerous other observations have been contributed within more recent years, serving further to enlarge our knowledge of this important subject. Perhaps the most notable among these have been the series of extensive experiments conducted by Pellini and Wallace[15] in 1916 into the various toxic effects produced by emetin on the various organs of the body. As a result of their findings, they were able to formulate the following conclusions:

1. Emetin depresses, and may eventually paralyze the heart.
2. It is a powerful gastro-intestinal irritant, whether given by mouth or by subcutaneous injection.
3. It causes a definite derangement of metabolism characterized by an increase in nitrogen loss and an acidosis.
4. While in normal individuals, given moderate doses, these actions may not be of importance, in pathologic states of the circulation, intestinal tract, or metabolism, there may be a very definite source of danger.

While it is true markedly poisonous effects are rarely observed in connection with the comparatively small doses of emetin ordinarily employed in clinical practice, milder types of toxemia are by no means uncommonly encountered. Lyons,[16] for example, as early as 1915, pointed out the not infrequent occurrence of a peripheral neuritis in the course of the ordinary subcutaneous administration of emetin. In my opinion, this complication may take place even with very small doses of the drug and, while rarely of a serious character, may nevertheless give rise to a considerable degree of pain and muscular discomfort. Other sequelae resulting from the use of emetin in average doses from time to time have been recorded in the literature, such as an intractable form of watery diarrhea, gastric hyperemia and irritability, cardiac arrhythmia, including in addition the various types of skin reactions which frequently appear at the site of the injection of the drug.

The investigations made in regard to the toxicology of cephaelin hydrochlorid, while not carried out on as extensive a scale as has been the case with emetin, have nevertheless revealed a close similarity in the physiologic action of the two alkaloids. Cephaelin has been shown to possess greater emetic properties and is far more irritating to the skin when given hypodermically than is emetin. Its destructive effects on the vegetative endameba is probably equally as great as that of emetin. This was strongly indicated in the course of some clinical experiments I was enabled to make three years ago[17] on a limited number of adult subjects suffering with active intestinal amebiasis. However, the same failure in the matter of the destruction of the cysts was noted, as had been my experience previously with the emetin therapy.

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[11] Jones, G. I.: The Treatment of Intestinal Amebiasis, The Journal A. M. A., March 20, 1915, p. 982.

[12] Pelletier: Ann. Chem. and Phys., 1817, **4**, 172.

[13] Paul and Crownley: Phar. Jour., 1895, **25**, 111.

[14] Wild: Lancet, 1895, **2**, 1274.

[15] Pellini and Wallace: Amer. Jour. Med. Sc., 1916, **152**, 325.

[16] Lyons, R.: Amer. Jour. Med. Sc., 1915, **150**, 97.

Because of the failure of the ipecac alkaloids to remove encysted ameba from the tissues, and likewise in consideration of the toxic properties which have been shown to be inherent in these agents, attempts have been made recently to devise higher chemical formulas of the alkaloids which, it was thought, might overcome the various objectionable features of the simpler products.

Of these compounds perhaps the two most widely employed have been emetin mercuric iodid and emetin bismuthous iodid, prepared in accordance with definite formulas suggested by DuMez[18] in 1915. These substances were designed for oral administration and, because of their relative insolubility, it was hoped that their emetic effect might be reduced to a minimum. However, according to most observers, this hope has scarcely been realized. Much favorable comment has nevertheless appeared in the recent literature, emanating principally from British sources, extolling the special virtue of these preparations in the more intractable forms of endamebic dysentery and claiming a particular influence in the extermination of the carriers.

In this country, Walters and Koch[19] have recently published the results of experimental work carried on by them with synthetic derivatives of cephaelin, citing with particular favor cephaelin iso-amyl ether hydroiodid. They found this substance uniformly effective in destroying both the vegetative and the encystic endameba in the intestinal tract of cats. I have availed myself of the opportunity offered by Dr. Walters of trying out this preparation on human subjects, three in all, each presenting outspoken chronic endamebic infection of the bowel. Its action on the free living endameba proved it to be equal in value to that of the simple alkaloids, but again no definite effect could be noted in its action on the cysts. The dose employed was from ⅓ to ⅔ grain, three times a day in capsules by the mouth, and the treatment was made to cover a period of ten days in each case.

IPECAC TREATMENT

In view of the evident inadequacy of the akaloidal therapy and its failure effectually to destroy the endameba, once they have reached the encysted state, the conviction has grown increasingly strong with me that a return to the use of the original crude ipecac root should be most seriously considered by the profession at the present time. In my hands the plan first announced in 1909 of making use of ipecac in the form of enteric-coated pills has continued to yield uniformly gratifying results, both in meeting the active clinical manifestations of the disease processes and above all and perhaps of greatest importance, in the almost certain prevention of relapses which is achieved. The careful attention to detail which has been found so necessary to this plan of treatment, and which has unfortunately been an object of neglect on many sides in the past, would seem to justify a further word of explanation and emphasis at this time. The failure to observe the smaller details of the plan has been the cause, in fact, of much of the former prejudice surrounding the administration of the crude ipecac. First of all, it is essential that the patient be put to bed for the full course of the treatment, extending ordinarily over a period of ten days, and also that the dietary be restricted in the beginning to articles of food which leave no residue in the intestinal tract, such as broths, whey, albumin water and the various nutrient alcoholic preparations. To this list, milk is to be added only after the fifth or sixth day of treatment. A dose of castor oil should be administered on the morning of the first day of treatment and in the evening around 9 o'clock, from ten to fifteen salol-coated pills should be taken, each containing 5 grains of the powdered ipecac. The patient is advised to swallow these slowly with the help of moderate amounts of water. No nourishment is allowed for two hours preceding and likewise for six hours following the administration of the pills. Each succeeding night the same plan is to be repeated, the number of pills varying on each occasion from ten to fifteen. It may be found necessary, especially in the presence of any depressing effect, to discontinue the use of the pills for a one-night period. Each day the attending nurse keeps a record of the number of pills which might have passed undissolved in the stool, with the view of determining the total amount of ipecac retained at any stage of the treatment. A simple method of daily charting, illustrated in the accompanying table, has been devised by us for this purpose.

AMOUNT OF IPECAC ADMINISTERED AND RETAINED DAILY

Date	Pills Administered	Pills Found Undissolved in Stools	Pills Retained
Jan. 1	15	0	15
Jan. 2	15	2	28
Jan. 3	14	3	41

The complete dosage includes the retention of at least 100 pills, equivalent to 500 grains of the powdered ipecac. This is accomplished usually within a period of ten days and only under rare conditions must be made to extend over two weeks. Should nausea and vomiting arise as troublesome features, an extra enteric coating should be added to the pills. We have found that, under average conditions, a coating of one tenth inch of salol is ample. For reasons not altogether clear, it may happen that large numbers of the pills will pass through the intestinal tract in an undissolved state, even in spite of a diminished enteric coating. Under these circumstances, we frequently adopt the plan of making from one or two small punctures into the outer layers of the pill surface, with a small sized surgical needle. When, under rare conditions, the ipecac will not be tolerated in pill form by the patient, we may often successfully substitute the duodenal intubation method, employing for the purpose daily installations of 30 grains of the powdered ipecac suspended in water.

SUPERIORITY OF IPECAC

There remains to be considered finally the essential cause for the superior effectiveness shown by the entire ipecac root in the treatment of intestinal amebiasis, as compared with its constituent alkaloidal derivatives. From the standpoint of analogy with other therapeutic agents, it would seem that the active principles would, at least, possess a value equal to that of the parent substance. However, in the matter of the control of a protracted endamebic infection of the bowel, conditions of a somewhat anomalous nature are presented. The crux of the problem, to my mind, hinges on the question of the degree of concentration of the active constituents of the specific drug at the site of infection in the large bowel. When the alkaloids are administered by hypodermic injection or by mouth within the confined limits of safety, the attenuation that results in the blood stream renders the drug relatively inert when brought to bear on the infecting organisms in the intestinal wall. Under the influence of a weak dilution, the endamebas escape immediate destruction by seeking cover, so to speak, within a resistant cyst wall. Were it possible to employ massive doses of the alkaloid, prompt and rapid annihilation of the endameba might be expected to ensue. The toxic character exhibited by these substances in excessive amounts precludes, however, the employment of a large dosage. With the use of the ipecac mass orally, in daily amounts as high as 75 grains and yielding approximately 1.5 grains of total alkaloids, a concentration of the effective properties of the drug is attained in the infected colon, without any possible danger of toxemia. The patient's intestinal tract, having been rendered free by dietary restrictions, as explained in the foregoing, the pills pass quickly into the large bowel, where the salol coating is finally dissolved away in its entirety and the ipecac thus set free for absorption. It may be considered that soluble compounds of the alkaloids are formed directly within the colon, and during the process of absorption not only the vegetative endameba, but the encysted forms as well, suffer destruction in the concentrated medium. Apart from whether this explanation be considered adequate or not, it is my firm conviction, based on clinical observations extending now over several years, that the treatment of intestinal endamebiasis by means of the crude ipecac offers a most promising outlook for complete and permanent cure, not attainable with the use of the alkaloids alone, whether administered orally or hypodermically.

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[17] Simon, S. K.: Tr. Am. Soc. Trop. Med., 1916.

[18] DuMez, A. G.: Philippine Med. Jour., 1915, B, **10**, 73.

[19] Walters and Koch: Jour. Pharmacol. and Exper. Therap., 1917, **10**, 73.

CONCLUSIONS

1. Both ipecac and its constituent alkaloidal derivatives, emetin and cephaelin, have been found to act specifically on the vegetative or free living forms of the *Endameba histolytica*.

2. The crude ipecac root in doses sufficient completely to destroy the infecting organisms is never toxic.

3. Both emetin and cephaelin frequently exhibit toxic properties in an average dosage of from 0.5 to 1 grain daily over a limited period.

4. The alkaloids alone are ineffective within safe limits of dosage in destroying the encysted forms of the *Endameba histolytica*.

5. The entire ipecac root, when employed under proper conditions, not only destroys the vegetative endameba but the encysted forms as well, and thereby prevents recurrences or relapses of the infection.

ABSTRACT OF DISCUSSION

Dr. Frank Smithies, Chicago: I agree with Dr. Simon that the use of crude ipecac has been effectual in the treatment of acute or chronic enterocolonic amebiasis. Perhaps Dr. Simon unintentionally neglected to state that there are instances where emetin is also of service. I came to the conclusion some years ago that large doses of ipecac administered after the method described by Dr. Simon and first suggested by Dock, aided in quickly ridding the terminal ileum and the colon of organisms, if emetin be given hypodermically at the same time. Dr. Simon explained the reason for large doses of ipecac, namely, to obtain a continued saturation of the bowel contents with the drug. Often encysted or active amebas are deep within the mucous membrane of the intestinal wall. A medicine solely in the bowel cannot reach them and consequently does *not* kill them. It is in this class of case that it is necessary to carry the amebacide to the organism by means of the lymph or the blood stream; therefore, it is necessary to combine the ipecac treatment with emetin given hypodermically. Unless this is done, the bowel contents will be rid of protozoa but the organisms already in the wall of the intestine will carry on their destructive work. If one uses emetin alone, and neglects to use the ipecac saturation of bowel contents, it is self-evident that sooner or later the ulcers free from amebas will become reinfected from the bowel contents. The combined treatment is successful in curing the majority of patients, and prevents recurrences.

In respect to recurrences, I would emphasize the frequent finding of viable or encysted amebas in the gallbladder, appendix or old, partly healed intestinal ulcers. In these cases it sometimes is possible to remove the foci of infection surgically. I have seen several cases where there was complete recovery after the removal of the gallbladder. Further, it is my opinion that patients are too often pronounced cured; that the stools are not examined for a sufficiently long time after the administration of specific medication. Viable amebas and cysts are often present in the stools when the individual is symptomatically well. We have the patients return once every two or three months for reexamination of freshly passed stools. We never use castor oil as a preliminary cathartic but rather a saline. This enables the exact examination of the stool microscopically.

Recently we have been using ipecac by a new method, namely, the introduction of from 2 to 4 ounces of wine of ipecac directly into the colon by rectum. This has been effective where other methods of giving ipecac have failed. We have recently had two patients under observation in whom almost constant hemorrhage produced severe anemia. In this class of case we have employed transfusion of large quantities of whole blood beneficially. This procedure should be employed more frequently in order to increase tissue defense in severe amebic enterocolitis.

Dr. Hugo A. Freund, Detroit: My observations bear out what Dr. Simon said, that occasionally patients do not respond to ipecac. Having had a somewhat unsatisfactory experience with emetin and a very happy experience with ipecac, I thought of using the duodenal tube to give the wine of ipecac, preparing the patients much the same as Dr. Simon has suggested, except that at the end of about three days I give them a small dose of opium in some form to quiet them, so they will probably be constipated for two or three days following. I pass the duodenal tube on an empty stomach, and then inject the wine of ipecac. By the instillation of relatively large doses I get satisfactory results, beginning the first day by giving 1 ounce, the next day 2, and so on. I have given as high as 6 ounces in one instillation. I have had very satisfactory results in the fourteen cases I treated by this method. I reexamine them every three months, looking for encysted forms; and I have not seen a single relapse.

Dr. Horace W. Soper, St. Louis: Since I adopted the use of emetin intravenously I have had fewer relapses. Two cases of neuritis developed, but they were mild, and very soon subsided. The emetin is injected in 1-grain doses, until the lesions have cleared up, as demonstrated by the sigmoidoscope. The lesions are very characteristic, small, elevated, grayish patches, which, when wiped off, leave a little bloody spot. The viscid mucus in these patches shows almost a pure culture of ameba. So that in the treatment of these cases we watch the lesions, and discontinue the emetin when the case is clinically improved. I give it once a week for two months, hoping to catch the encysted forms at the time of their development. The ipecac as used by Dr. Simon presents some disadvantages, inasmuch as the pills are very difficult to make. Dr. Simon's pharmacist has, perhaps, solved that problem. Some years ago I was unable to get a pill that would not cause nausea or that would not dissolve in the intestinal tract.

Dr. Sidney K. Simon, New Orleans: The whole aim in the treatment of an endamebic infection lies in the removal of the cysts. The destruction of the vegetative forms alone, with the relief of clinical symptoms that follows, is in itself rarely a difficult problem. Putting the patient to bed for a period of a few days will usually suffice to relieve the immediate clinical distress even without the aid of other measures. It is only in the complete destruction of the encysted forms, however, that relapses can be prevented and a permanent cure established.

In regard to the examination of the stools, we long ago adopted the proctoscopic method in all cases of suspected protozoon infection. In this way the smears are made directly from ulcerated or denuded spots on the rectal mucosa, without the necessity of having the stools conveyed in bulk. The severe grades of anemia represent the end result of a protracted endamebic infection. With specific medication such a complication should rarely be observed. In the last few years, I have seen very few instances of severe anemia among my endameba cases.

Dr. Freund's ipecac method I intend to keep in mind. However, since the method I have described this morning has been uniformly successful as a curative measure in fully 500 cases, with very infrequent, if any, relapses, other plans do not, of course, make strong appeal. In regard to the intravenous injections of emetin hydrochlorid, mentioned by Dr. Soper, I would wish to advise caution. Such a procedure, especially in the hands of the less experienced, would be capable, I think, of much abuse.

The point Dr. Soper made concerning the availability of the salol coated ipecac pill has been a bone of contention ever since the method of treatment was inaugurated. Any competent pharmacist should be able to dispense these pills satisfactorily. However, a certain amount of technic is required which the average druggist does not seem to have acquired. The pills cannot be produced in bulk by the manufacturing pharmaceutical houses, because of the fully demonstrated lack of durability of the product. The pills must be made by the individual druggist and dispensed in quantities sufficient only for the individual case.

FOCAL INFECTIONS OF THE EYE FROM THE INTESTINAL TRACT *

JAMES GARFIELD DWYER, M.A., M.D.
NEW YORK

During the last few years marked attention has been paid to the consideration of infections of various parts of the body, due to a low-grade chronic infection in other parts, especially in the teeth and the tonsils. A very considerable advance has been made in the treatment of these so-called focal infections by the treatment of the original foci. The number of such cases on record is enormous and is fast increasing, and nowadays with certain infections we look for the primary cause and eradicate it if possible. Among these focal infections are some lesions of the eye that used to be grouped under a general classification, as "rheumatism," etc. We know now that there is probably no such disease as rheumatism per se, but that the symptoms classified as rheumatism are probably manifestations of some focus of infection. The work on focal infections of the eye, due to infections of the teeth and tonsils, has been reported by many observers and need not be touched on. This paper will deal with focal infections of the eye, due in all probability to the absorption of toxins from the intestinal tract. A few suggestions will also be made as to the method of treatment now being given a trial in order to overcome these infections, since it is impossible to treat the intestine surgically in the same way teeth and tonsils are treated.

This investigation has been going on for about two years, and any statements that are made are the outcome of what we have learned in that time, and are subject to change in the future. The whole idea of presenting the paper now is to direct attention to such infections and to possible methods of treating them.

At the beginning I was confronted with the fact that no two authorities were agreed as to what the intestinal contents in general should be; that is, the reaction, the amount of chemical constituents, the food detritus and the bacteriologic content. This was and still is a great difficulty. Some may question my interpretation of what normal intestinal contents should be, but from an examination of hundreds of samples, I have come to look for certain main characteristics.

Practically all authorities agree that normal feces is faintly alkaline to litmus, but litmus is a rough and ready method of taking the titration. With phenolphthalein the reaction is slightly acid, but only with fresh feces, because the reaction changes very rapidly on standing. The question of reaction is a very important one and one not easy to decide, as the end-point of acidity of alkalinity varies with the indicator used, namely, litmus, methyl orange, plenolphthalein, etc.

Just as in diabetes and nephritis the modern schools of medicine are aiming to test the efficiency of the body to assimilate the three food elements, namely, fats, carbohydrates and proteins, so I examined the detritus, keeping these three fundamental bases in mind. My guiding principle was to cut out of the diet the types of food that were not being assimilated, in other words, food elements whose by-products are indol, skatol and phenol. These products are normally present and unless abnormal in amount can be disregarded, but as the former two are known to be absorbed into the system, appearing as indican in the urine, and as they are products of protein metabolism, I paid special attention to them, as will be noted later.

BACTERIOLOGY

Here I was confronted with the biggest problem of all, as the intestine normally contains many and various forms of bacteria. I made no endeavor to identify the various forms of bacteria present, as that would have been impossible; but bearing in mind the work of various investigators, especially Metchnikoff, I paid special attention to the presence or absence of the colon bacillus. Now, the colon bacillus appears in the intestine a few days after birth, and is usually found there throughout life. Again, the colon bacillus is gram negative, that is, it stains a different color from that of the other bacteria usually found, the latter being gram positive with very few exceptions. Hence we have a ready means of comparison. The ptomain producers are usually gram-positive large bacilli, producing either acid or alkali, according to the group. Many of them are of the anaerobic varieties, such as the *Bacillus aerogenes-capsulatus*.

Keeping these facts in mind and trying to narrow the whole affair down to a practical working basis, I carried out the following routine: The intestinal contents were examined as to their reaction, their content of indol and skatol, the food residue and the bacteria. Besides these cardinal principles, other side factors were noted. If the contents were found to be practically normal, these were noted as controls. In most of the patients examined, the contents could be classified under two headings, as to whether they were highly acid or alkaline. In both classes, the colon bacilli were either entirely absent or present only in very small numbers, the other bacteria being practically gram positive. This was true whether the reaction was to either extreme, since the colon bacillus cannot live in a highly acid medium, although it is an acid producer, and of course it is killed off in alkaline mediums. It was always found that in both highly acid and highly alkaline specimens the indol and skatol content was high, and there was always a high percentage of indican in the urine.

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* Read before the Section on Ophthalmology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

The following methods of treatment were then adopted. In the highly acid specimens, an endeavor was made to alkalize the contents by the use of irrigations of a 1 per cent. sodium carbonate solution and then to practice colon transplantation in order to approach the normal. At the same time the patients were put on rather free diet, cutting out those foods that were not completely assimilated, such as meat. In other words, the tolerance for the three fundamental foods was established as far as possible. In the highly alkaline specimens, irrigations with lactose were given and then the colon bacillus was transplanted. At the same time the Bulgarian bacilli were given by mouth, the whole idea being to approach the average normal. Lactose was also administered by mouth in such cases to provide a suitable pabulum for the colon bacilli. At stated intervals, examinations were made and the treatment was repeated until I got a good growth of colon bacilli.

The types of cases I have chosen to be reported are those that would not respond to any other form of treatment—cases in which the patients were thought to be focally infected, although treatment of the teeth and tonsils proved unavailing. They are all cases that had lasted for weeks, the patients being better one day and worse another, showing no real improvement.

REPORT OF CASES

Case 1.—Charles B. had lost the sight of the right eye on account of a low grade ulcerative keratitis that had lasted six months and left the eye in a badly damaged condition, with the pupillary area of the cornea covered with a macular scar. He had been treated for this eye by some of the best ophthalmologists in the city and had been an in-patient at one of our hospitals for weeks. When I saw him, he had been in our wards for some weeks with the same condition in the other eye, the history of this lesion dating back two months. Every test had been negative and he was put on antispecific treatment, as it seemed the most promising remedy. On taking his history, I elicited the fact that he had had intestinal poisoning for years and could not get any relief. He volunteered the information that the other eye had become quiet as soon as he had gone to a stomach specialist. At first examination, the condition of the eye revealed a diffuse low grade keratitis, with a low grade iridocyclitis. In spite of all measures, the pupil could not be kept dilated but would dilate under the atropin and then contract again. One noticeable point was that the man's face was covered with acne rosacea. Immediate examination of the intestinal contents revealed a reaction highly alkaline, indol and skatol ++++, and bacterial smears totally gram positive. The treatment outlined in the foregoing was carried out, and within two days, the condition of the eye was much better, the pupil remaining dilated under cycloplegia. Within a week he went home with a perfectly quiet eye. The acne cleared up and when he last reported, after six months, he was in excellent condition, with a perfectly serviceable eye.

Case 2.—J. Mc., a man, had suffered nine months from a plastic iritis of low grade in both eyes, which kept him from business and made a semi-invalid of him. He had been under the care of competent ophthalmologists in the city, had had his teeth roentgenographed and the diseased teeth removed, and had had his tonsils out, yet the condition persisted. The same condition was found here. Within eight days the eyes had quieted down and, according to the last report I had, some months after the lesion, he was in excellent condition.

Case 3.—Mr. S., Orange, N. J., consulted me about his eye. He was suffering from an intense plastic iritis that had lasted two months, and he had had all the accepted methods of treatment. His condition cleared up rapidly with the treatment outlined for highly acid stools.

COMMENT

By far the largest number of cases of choroiditis, retinitis, iridocyclitis, glaucoma and the like I have diagnosed as to the condition present, but I cannot go any further in the etiology or in the treatment. The cases run their course in spite of the treatment adopted. It would be the ideal condition if we could take such cases and study them extensively so as to arrive at the cause. The reference of eye infections to the intestinal tract is not new, as evidenced by the article of such writers as Herter and Smith, published in 1894, describing their cases of ophthalmoplegia, low grade conjunctivitis, etc., which were cured by treatment of the intestinal tract. My attention was called to this article by Dr. Coffin, who was incidentally the means of directing my attention to the intestinal tract.

I do not claim that my work is new. It is simply an experiment. But the results in the series of sixty-seven cases I have treated were in the main very striking, and it seemed well worth while to work along these lines.

ABSTRACT OF DISCUSSION

Dr. Edgar S. Thomson, New York: Focal infection of the eye attracts attention most frequently in connection with uveal disease. Its intractability and tendency to relapse are well known. Cases of iritis and cyclitis relapse in spite of the greatest care and the most careful control. The baneful influence of the digestive tract, especially the intestinal tract, has long been recognized, and treatment has often been productive of good results, but the question has not been placed on an exact basis. The exact method mentioned by the essayist has not been employed. Intestinal vaccines have been used, and cultures of acid-producing bacilli have been given, chiefly by mouth, but with no very exact checking up of results, at least in ophthalmic work. Judging by clinical experience, the most important single factor in the examination of the feces is the determination of the reaction. A low acid reaction is the most desirable balance for reducing putrefaction and for establishing the cultures of colon bacilli, and, given these two factors, the fermentative processes remain more stable and the local condition in the eye does not recur. In our cases the local symptoms in the eye apparently have kept pace with the intestinal condition. Manifestly toxic conditions—iritis, cyclitis and choroiditis—have improved rapidly, and in the majority of cases have not relapsed in the time during which we used the method. The course of the disease has in general been much shortened and local absorption of precipitates and exudates has gone on in a way that was suggestive of a "cut-off" in the toxin supply. A few cases of optic neuritis and episcleritis have been affected very favorably. Certain forms of keratitis, associated with slow tissue repair, and low hemoglobin percentage, have done remarkably well. A few cases of intractable ciliary cramp have been affected very favoraby.

Dr. Hiram Woods, Baltimore: There is no doubt that there is a sufficiently intimate association between gastro-intestinal disorders and these intractable cases of uveitis and recurrent ciliary cramp to justify the suspicion of cause and effect. Those of us who have had clinical experience in studying these cases can appreciate the value of Dr. Dwyer's paper, provided the claim is confirmed. He brings us down to two very definite things, which we ought to get clearly in our minds, the hyperacidity on the one hand, and the hyper-alkalinity on the other hand, plus the absence of the colon bacillus. If these are definite diagnostic points, we have something far more reliable to go on than we have ever had before.

Major Harry S. Gradle, Chicago: I believe that absorption from the intestinal tract, as Dr. Dwyer said, plays a far greater rôle in the etiology of various ocular diseases than we have been willing to acknowledge for some time. We are dealing with an absorption of toxins from the intestinal tract, which affects an organ unable to withstand the influence of these toxins. Toxins in the intestines normally result from the breaking down of the various protein constituents of the food. There are few types of absorption, the abnormal absorption of normal toxins, and the absorption of abnormal toxins. By that I mean, in the first case, the excessive production and absorption of toxins from the intestinal tract, more than it is accustomed to (usually the result of a more or less chronic constipation); and, second, distubrances in metabolism, resulting in the production of abnormal toxins, that the human system is not at all accustomed to, and has no power of protecting itself against. The cases require radically different treatment. We must establish a normal passage through the intestines and eliminate the hyperproduction of the so-called normal toxins, and we must correct the disturbance of metabolism that results in the production of the abnormal toxins.

Dr. Clark W. Hawley, Chicago: The analysis of feces is important. I have been advocating the study of the relation of uveal tract disease and the toxins from the lower bowel for a number of years. My first discovery of a relation between uveal tract disease and toxins from the lower bowel was in my own case. I was suffering from a slowly increasing chronic cyclitis of both eyes and supposed I was getting blind, or nearly so. I was treating an autointoxication following a very severe case of facial erysipelas and soon discovered that my eyes were improving. This led me to believe that there might be a relationship between the two. Since then many cases have been treated along the same lines with as good results. I have been surprised at the number of cases of inflammatory glaucoma which were due to these toxins. Six patients treated remain cured.

Major Walter B. Lancaster, Boston: I was surprised that the writer in enumerating the foci of infection outside the intestines limited himself to the teeth and tonsils. There are many other foci of infection which affect the eye secondarily. I have been very slow to accept the theory that these ocular inflammations arise from the intestines. I have inclined toward the theory that the ocular condition is of bacterial origin, the micro-organisms gaining access through the blood stream. This was well illustrated in one case in which the seminal vesicles acted as an infection focus.

Dr. Will Walter, Chicago: There is no authority for the thought that the colon bacillus is infecting the intestinal tract in these cases, and it must not be forgotten that the liver intervenes between the absorbed intestinal contents and the general circulation. A focal infection means a tissue infection the chemic or bacteriologic elements of which are carried by the blood stream to areas more or less remote, where they set up inflammatory changes. Patients suffering from intestinal toxemia often show little indican or none. Whether there is present in these cases another toxin than that included in the indoxyl sulphates, and hence not shown by the tests for indican; or where there are elements which alter the tests in these cases; or whether, as I think most probable, the hepatic functions are neutralizing or altering these toxins, is not clear.

Dr. James G. Dwyer, New York: The term "infection" does not mean the presence of bacteria in the blood. Bacteria produce protein toxins, and we have the phenomenon of anaphylaxis. We can produce the anaphylactic phenomenon in the body by simple extraction from bacteria, whether they are pathogenic or not. With regard to the liver: Work has been done showing that the extracts of spleen, of heart, of lung, etc., are nontoxic, but there is a toxic quality in the liver, because it takes up these toxins. It does not matter whether the toxin comes from putrefactive organisms. We are not dealing with infections from the colon bacillus. That is exactly the opposite of what I am trying to bring out. The three common foci are usually the teeth, the tonsils and the intestinal tract. I do not know that we are far enough advanced to identify what are normal protein products and what are abnormal. The point I wish to bring out is this, that the reason the joints and the eyes are affected is in all probability because we have a very sudden change from blood supply to lymph supply. In the uveal tract we have an ideal condition of lymphatic supply.

EARLY DIAGNOSIS OF CEREBROSPINAL MENINGITIS BY THE EXAMINATION OF STAINED BLOOD FILMS

REPORT OF A CASE *

W. W. KING, M.D.
Surgeon, U. S. Public Health Service
SAN JUAN, P. R.

According to the clinical notes furnished me by Dr. N. Doval of San Juan, Porto, Rico, the attending physician, A. B., a mulatto girl, aged 4½ years, native and resident of San Juan, who had never had any serious illness, and whose family history was unimportant, after a slight rhinitis lasting several days, without fever or any particular discomfort, complained of headache and severe pain in the right shoulder. This was about 6 p. m. Later she was noticed to have high fever. When first seen by Dr. Doval, at 8 o'clock, the temperature was 39.8 C. (103.6 F.); pulse, 130, and respiration, 28. She had vomited several times. About midnight, convulsions began and continued several hours; there were clonic spasms of short duration. The temperature was 40.2 C. (104.4 F.), the pulse weak and uncountable. The patient vomited a dark colored fluid.

I first saw the patient at 8 a. m. She was then in coma; the extremities were cold; there was no pulse. On the cheeks, arms and body were several irregular and indefinite areas slightly darker than the normally dark skin. Supposing this to be a beginning hemorrhagic eruption (later confirmed), I made a tentative diagnosis of cerebrospinal meningitis. Two small drops of blood were squeezed from a puncture in the lobe of the ear, but the peripheral circulation had so nearly stopped that no more could be obtained. These were used for making two smears on slides. A syringe for making lumbar puncture was not at hand, and the patient died before the laboratory assistant sent to do the lumbar puncture arrived at the house.

Death occurred at 9 a. m., about fifteen hours after onset.

At the laboratory, a slide was immediately stained with Leishman's stain. The enormous number of leukocytes attracted attention at once, and then it was seen that some of the polymorphonuclear neutrophils contained a diplococcus resembling the meningococcus. The second slide was stained by the Gram method controlled by the simultaneous staining of a known gram-positive coccus, and the diplococci were seen to be gram-negative. On these points, the diagnosis of cerebrospinal meningitis was regarded as confirmed.

Necropsy was refused, but permission was finally given to make punctures to obtain blood, and to make a small opening into the spinal canal. This was done five hours after death, and 15 or 20 c.c. of blood were secured from the right heart, basilar meninges and dorsal region of the spinal canal, all

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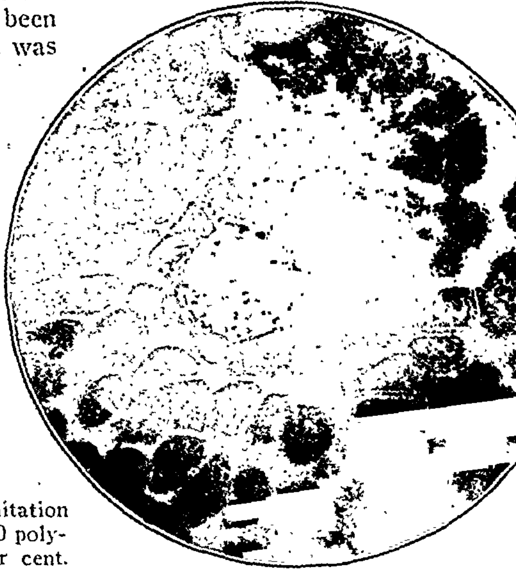
* From the laboratory of the Institute of Tropical Medicine and Hygiene of Porto Rico.

of which were filled with dark fluid blood. Lumbar puncture failed to obtain blood or fluid, although the point of the needle seemed to be free in the cavity. A large number of cultures were made in ascitic bouillon, and on ascitic agar and blood-serum agar, and many smears also were made from each sample of blood. All cultures remained sterile, and prolonged search of the stained slides failed to show a single diplococcus. The meninges, as seen through a small opening in the dorsal region, appeared intensely injected without signs of any exudate. After death, the areas of darker skin were clearly hemorrhagic and more numerous than in life. In size they varied from mere points to several centimeters in diameter.

The diagnosis in this case was particularly important because the case occurred in a populous part of the city, and the rapidity with which death took place attracted considerable notice and alarm. It occurred at the time (November, 1916) when public apprehension had been much aroused by the epidemic of poliomyelitis in New York, a port with which San Juan has frequent steamer connections. The outbreak of bubonic plague in Porto Rico in 1912 was by no means forgotten. Rapidly fatal malaria occurs in the island, though fortunately it is rare, and the child, so far as known, had not been in a malarious district. That it was true typhus fever was less likely, as this is a rare disease in warm countries, and never reported in Porto Rico, yet it seems possible that it might occur. Hemorrhagic smallpox was not improbable in view of the prevalence of smallpox during the previous year. Cerebrospinal meningitis in sporadic cases is occasionally seen.


Meningococcus in blood film, within neutrophil.

There seems little doubt that the diplococcus seen in the blood films was the meningococcus. It was characteristic in size, morphology and staining reaction, and in its limitation within the cells. In a count of 1,000 polymorphonuclear neutrophils, 3.7 per cent. showed the diplococcus, sometimes only one or two pairs but generally in fair quantity; not infrequently the cell was thickly crowded with them. The photomicrograph was taken from an average specimen. No extracellular organisms were seen.

Sufficient blood could not be obtained to make a total count of the leukocytes, but their great abundance in the stained specimen indicated a very high leukocytosis. The differential count of 500 leukocytes revealed: polymorphonuclear neutrophils, 62.0; small lymphocytes, 6.4; large lymphocytes, 2.8; large mononuclears, 24.0; transitionals, 4.0; eosinophils, 0.8; basophils, 0. The Arneth formula was: Class I, 43; Class II, 33; Class III, 20; Class IV, 4; Class V, 0; index (Arneth), 76; (Bushnell and Treuholz) 86, a considerable shift to the left. It must be remembered that this blood was taken during the last hour of life when the circulation had become very sluggish, and it is probable that the blood picture shown was not that of a few hours earlier. It is given as noted, but it is of comparatively little importance beside the fact of the presence of the meningococcus, which made accurate diagnosis possible.

It is now generally accepted that the meningococcus passes to the blood from the mucous membrane of the nasopharynx and produces a primary blood infection to which the meningitis is secondary. This view has been emphasized recently by Herrick,[1] Medlar[2] and Thomsen and Wulff,[3] but they apparently did not utilize this "meningococcus sepsis" or bacteremia for early and rapid diagnosis by search for the diplococcus in stained blood films. Thomsen and Wulff used blood cultures and concluded that the number of meningococci in the blood may not be very large, and that they may not remain long in the blood stream. Elser[4] had previously expressed the same opinion.

Some months after seeing the foregoing case, I had the opportunity of looking over the literature of meningitis at the Surgeon-General's Library in Washington, D. C., and I found but one reference to the use of blood films for diagnosis in this disease. Horder,[5] in speaking of the diagnosis with reference to "superacute" cases, says that the examination of blood films may prove the nature of the case; presumably by finding the meningococcus. That this method has not been used more is due apparently to the belief that the organisms are too few in number in the blood stream for ready demonstration, and this belief seems based on the comparatively few colonies or negative findings after cultures have been made of considerable quantities of blood.

The presence of so many meningococci in the films from this case shows that they may be numerous in the peripheral circulation, and suggests that in other cases they may be in sufficient number for diagnostic purposes. It also brings up the possibility that cultures may give an erroneous impression as to the number present in this situation. Aside from the technical difficulties of making cultures of the meningococcus, there may be other reasons why cultural results may not be a true index to the number of meningococci in the circulating blood. The antimeningococcic serum produced by the response of the system to the infection is bacteriolytic, opsonic and antitoxic (Frost[6]), and its opsonic action is so promptly manifested that the meningococcus is found characteristically within the cells (phagocytes). Phagocytosis being a step toward the destruction of the invader, a phagocyted organism suffers a reduction of vitality, probably to such an extent that it quickly becomes incapable of reproduction, particularly under the artificial conditions of culture. This may be especially true of the meningococcus, which is very susceptible to unfavorable influences, and, if so, then successful culture must come from the more vigorous extracellular individuals. If there is a marked degree of phagocytic activity, these extracellular forms may be few or absent, giving poor results in culture, while the intracellular, that is, phagocyted forms, may yet be sufficiently numerous to be demonstrable in smears. Furthermore, the antimeningococcic serum present in the blood used for culture may exert enough inhibitory action to prevent the development of some organisms. It is interesting to note that Elser reported a fatal termination in 80 per cent. of the cases in which the meningococci were obtained by culture, an observation which is consistent with the foregoing ideas, the insufficient production of antimeningococcic serum permitting the persistence of extracellular forms in the blood stream.

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[1] Herrick, W. W.: The Epidemic of Meningitis at Camp Jackson, THE JOURNAL A. M. A., Jan. 26, 1918, p. 227.

[2] Medlar, E. M.: Epidemic Cerebrospinal Meningitis at Camp McClellan, THE JOURNAL A. M. A., Feb. 16, 1918, p. 458.

[3] Thomsen, O., and Wulff, F.: Meningococcus Infection and Meningitis, Hospitalstidende, Dec. 6, 1917; abstr., THE JOURNAL A. M. A., Feb. 16, 1918, p. 498.

[4] Elser, W. J.: A Contribution to the Study of Epidemic Cerebrospinal Meningitis, Jour [illegible] 1906, N. S., 9, 89.

[5] Horder, T. J.: [illegible] ndon, 1915.

[6] Frost, W. H.: [illegible] Meningitis, Pub. Health Rep., Jan. 26, 1912.

Whatever may be the sequence of events ordinarily taking place in the blood early in an attack of meningitis, the fact remains that in this instance the meningococci were easily found in the blood and were of great practical use for diagnosis. If the case was exceptional in this respect, it is interesting as an exception. It is not reported as an evidence of meningococcic bacteremia, for that has already been well established, but as an instance in which the bacteremia was utilized for making an early and rapid diagnosis. The thought is suggested that this method may have greater diagnostic possibilities than has been supposed. There are few diseases in which early diagnosis is so important, especially in very acute cases, and if the method is at all useful, it is applicable during the first hours or day, and in those cases that do not progress beyond the bacteremic stage. It is not thought that it would supersede lumbar puncture, but that it may have a place and value of its own, not only for the early information that it may give, but also on account of the ease and rapidity with which it may be carried out. The procedure requires only a minimum of apparatus and skill, and the taking of a few drops of blood from the lobe of the ear can often be done in cases in which the lack of a syringe, family opposition, or other circumstances render the more formidable operation of lumbar puncture difficult or impossible. In the examination of the films, the brilliantly stained diplococci are so readily seen that a large number of slides can be rapidly examined.

To determine its diagnostic value and limitations, it will be necessary to ascertain certain facts, such as: 1. The frequency with which the meningococcus may be so found. 2. The number of slides necessary to examine before a negative result can be announced, that, is, the quantity of blood required. 3. Whether it is in the very severe or fulminating cases only that it may be found; if longer search may not show it in the milder cases also. 4. If not demonstrable practically in the milder cases, in what degree of severity it may be expected. If limited to only certain very severe cases, it would still be very valuable, as it is precisely in such cases that prompt diagnosis is most desired. 5. In those cases in which it may be encountered, how early and how late this may be possible.

I could not find any reports of work having been done along these lines, yet the subject seems worthy of investigation. It would require the systematic study of many films from many cases of meningitis of different degrees of severity, controlled by clinical and other bacteriologic evidence, and I regret that I have not the opportunities for doing it.

A SELECTIVE MEDIUM FOR B. INFLUENZAE

OLEATE-HEMOGLOBIN AGAR *

O. T. AVERY, M.D.
Captain, M. C., U. S. Army
NEW YORK

The reports of various observers indicate that great difference of opinion exists concerning the etiologic significance of *B. influenzae* in the present epidemic of influenza. Some investigators have been able to isolate this organism from a large percentage of the cases that they have observed; others have succeeded in recovering it in very few instances. It is possible that technical difficulties in the isolation and growth of this microorganism may be in part responsible for the discordant results obtained in different laboratories. In any case, all those who have had experience in the isolation and cultivation of *B. influenzae* agree that in working with this organism, there are a considerable number of technical difficulties that have been only partly overcome by the methods so far devised.

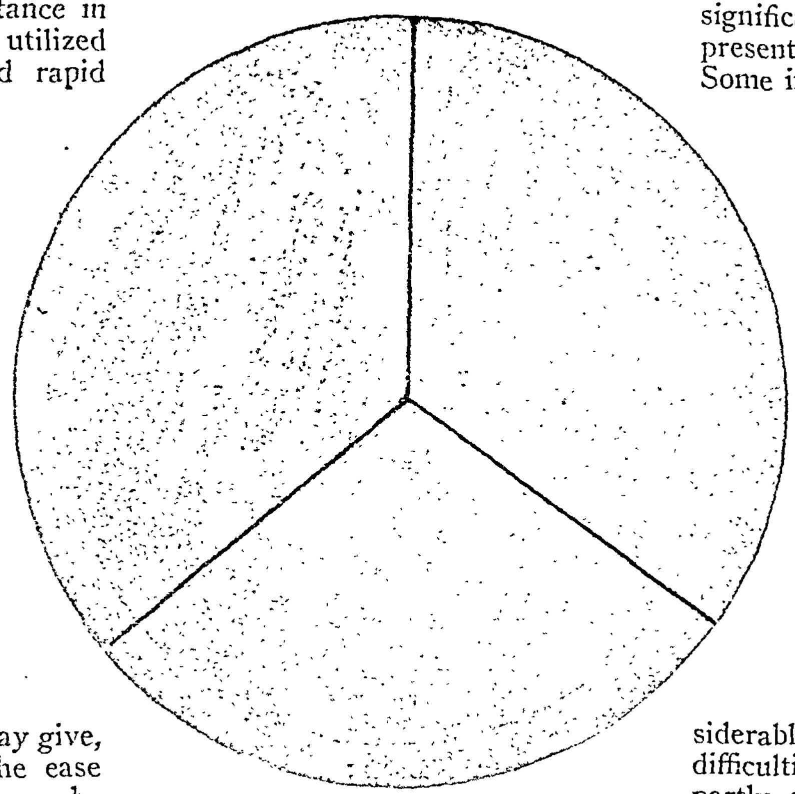

Fig. 1.—Plain blood agar plate: Lateral sectors show growth of pneumococcus and Streptococcus hemolyticus, lower sector B. influenzae, growth present but not visible in photograph.

In obtaining the organism from the sputum or throat cultures, or even from cultures made at necropsy, it is usually found in association with many other bacteria, most of which grow with greater luxuriance than does the influenza bacillus. It is evident, therefore, that if a medium could be devised that would prevent the growth of at least certain of these other organisms, such a medium would be of great assistance, especially if at the same time the growth of the influenza bacillus could be enhanced.

An attempt has been made to develop such a medium, and in the present report the results so far obtained are briefly described. In the development of this medium, use has been made of the observation that soaps of the unsaturated fatty acids are bactericidal for certain bacteria. In preliminary studies it has been found that the addition of sodium oleate to mediums prevents the growth of certain gram-positive organisms, principally pneumococcus and streptococcus, while the growth of *B. influenzae* is enhanced by the presence of this substance. The oleate-hemoglobin medium, therefore, was devised and has proved very satisfactory for the isolation of this organism.

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* From the Hospital of the Rockefeller Institute.

PREPARATION OF THE MEDIUM

Meat infusion agar (2 per cent.), which is neutral or slightly alkaline in reaction, is used as a base. To this is added a solution of sodium oleate sufficient to make a final concentration of 1:1,000. A serum-free suspension of red blood cells in broth is freshly prepared from sterile defibrinated rabbit's blood. One c.c. of this corpuscular suspension is added to each hundred c.c. of oleate agar, the addition of blood being made while the medium is still hot. Plates are then poured containing about 15 c.c. each of oleate-hemoglobin agar and used fresh to avoid drying out of the medium.

In the preparation of oleate-hemoglobin agar attention should be given to certain details:

1. *Agar.*—Two per cent. meat infusion agar having a reaction of from 0.3 to 0.5 acid to phenolphthalein should be used. The initial hydrogen ion concentration of the agar should represent a p_H of from 7.3 to 7.5. Hormone agar prepared according to the formula of Huntoon[1] yields excellent results, and has been used in the present study.

2. *Sodium Oleate.*—Two per cent. solution of sodium oleate (neutral) is made in distilled water, sterilized in the autoclave and kept as a stock solution. Five c.c. of this 2 per cent. solution of oleate is added to 95 c.c. of agar, giving a concentration of 1:1,000. In the present work Kahlbaum's sodium oleate has been used, but other preparations are serviceable.

3. *Suspension of Red Blood Corpuscles.*—Sterile defibrinated rabbit's or human blood may be used. Since serum is known to inhibit the action of oleate, and since hemoglobin is the constituent of blood essential for growth of *B. influenzae*, a serum-free suspension of the red corpuscles is used instead of whole blood. The red cells are removed from the defibrinated blood by centrifugation, the supernatant serum is pipetted off, and the corpuscles are made up to the original volume of blood by the addition of broth. One c.c. of this suspension of red cells is added to each hundred c.c. of oleate agar. The suspension of blood corpuscles should be added directly while the medium is hot, and just before use.

4. *Formula.*—This calls for:

Agar	94 c.c.
2 *per cent.* solution of sodium oleate	5 c.c.
Suspension of red blood cells	1 c.c.

Oleate-hemoglobin bouillon may be prepared in the same way by substituting broth in the place of agar in the foregoing formula.

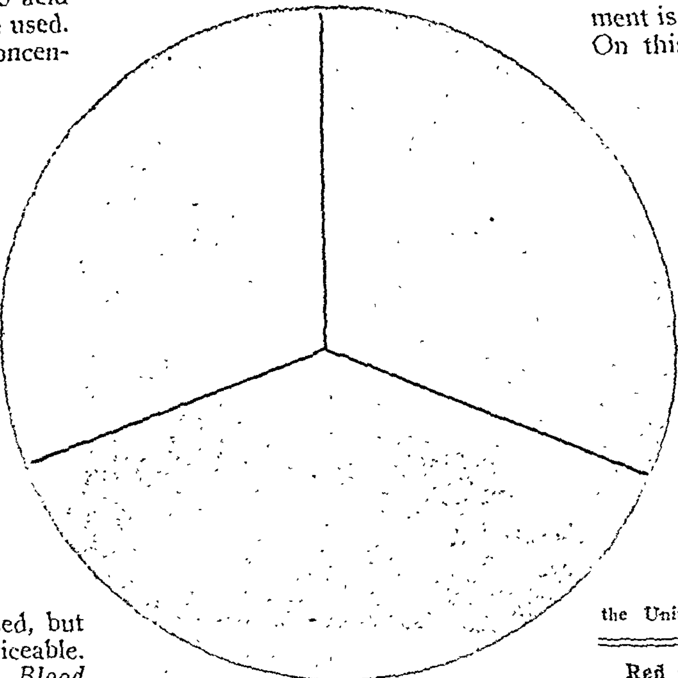

Fig. 2.—Oleate-hemoglobin agar plate: Corresponding sectors are planted with same organisms as in Figure 1 and show enhanced growth of B. influenzae in lower sector and complete inhibition of growth of pneumococcus and Streptococcus hemolyticus.

Cultures taken from the nasopharynx by the West tube or from the throat by direct swabbing should be streaked on the surface of the oleate-hemoglobin medium according to the technic described for the detection of meningococcus carriers.[2] Similar plates should also be made from the sputum. At necropsy, cultures should be taken from scrapings of the tracheal and bronchial mucosa, as well as from the lung exudate.

All culture plates should be incubated for forty-eight hours at 37 C.

COMMENT

The use of this medium has led to an increase in the percentage of positive findings of *B. influenzae* in actual cases of the disease and in convalescents. A report of these studies will be made in a subsequent communication.

Because of more luxuriant growth on oleate-hemoglobin medium, the colony of *B. influenzae* appears larger and less translucent than on ordinary blood agar, and in a later stage of development is not infrequently nucleated. On this medium, the gram-negative cocci of the *M. catarrhalis* group, staphylococci and occasionally diphtheroid bacilli grow, while pneumococci and streptococci of the hemolytic and *S. viridans* variety fail to develop.

The use in culture mediums of soaps of the unsaturated fatty acids, of which sodium oleate is a representative, suggests the application of this principle in bacteriologic studies of other organisms.

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[1] Huntoon, F. M.: Jour. Infect. Dis., 1918, 23, 169.

[2] Standard Technic of Meningococcus Carrier Detection, Adopted by the Medical Departments of the United States Army and Navy, 1918.

Red Cross Work Under Difficulties.—Dr. W. S. Dodd of the American Red Cross, working at Mejdel, near Jerusalem, Palestine, reports to headquarters in Washington, D. C., on conditions in the hospital in which he was stationed. The hospital was made up of about twenty-five tents, with a dispensary tent, living quarters for the staff, etc. It was located on a sandy district with thistles and scant grass, and it was the custom of every one, including the staff, to go barefoot. The patients in the clinics numbered from sixty to 100 a day. Of 252 operations performed by Dr. Dodd in less than seven weeks, 222 were for eye troubles, of which trachoma cases formed the great majority. Dr. Dodd treated a number of patients with bombed hands, of which there were many in the earlier days. The cases he treated were mostly in children who picked up unexploded Turkish bombs which had been laying in the fields from the time of the British advance in the Gaza region. Many fingers and hands were lost from this cause. Lice, fleas and other vermin were everywhere, and maggots were frequently found in wounds, as the favorite dressing of the natives, a piece of raw meat, is a good breeding place. They were found in the ears, and in scalp and other wounds. Difficulty was experienced in making the patients conform to sanitary requirements, and penalties had to be imposed for violations.

NEPHROLITHIASIS PURPURA HEMORRHAGICA AND STREPTOCOCCUS INFECTION

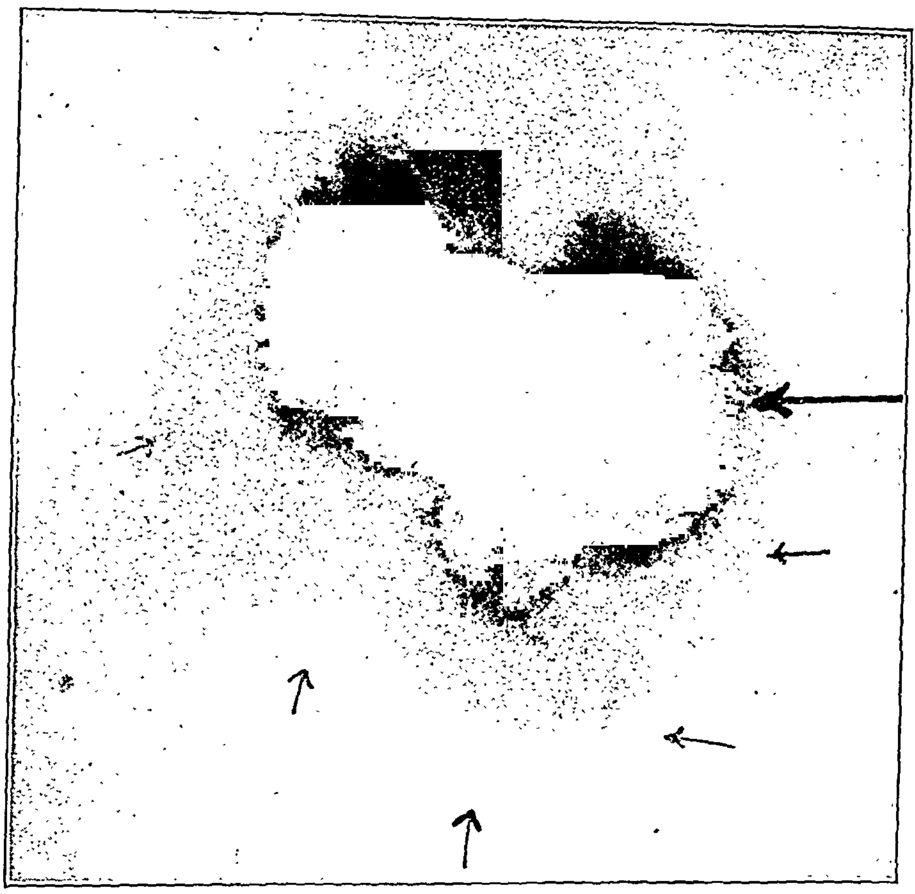
REPORT OF A CASE WITHOUT FEBRILE REACTION *

AUGUSTUS B. WADSWORTH, M.D.
ALBANY, N. Y.

I record the observations in this case on account of their clinical interest rather than any complete scientific study of the problems concerned, as these are too subtle to be solved by clinical methods. The history is therefore abstracted in order to bring out the salient points.

REPORT OF CASE

A woman, aged 59, consulted Dr. George W. Endicott of Plainfield, N. J., on account of bloody urine. She complained of no other symptoms. She was referred to me for diagnosis. In the urine, considerable quantities of blood, numerous pus cells containing bacteria, but no casts were found. A specific gravity of 1.015 and the quantity of urea, estimated, 1.1 per cent., or 17.8 gm., in twenty-four hours, was considered practically normal for a woman of her age, passing more than 1,600 c.c. of urine a day. The urine was not offensive and no tubercle bacilli were present. Bacterial cultivation under aerobic conditions on the surface of agar was sterile, but a streptococcus was finally cultivated under these conditions after it had been isolated under anaerobic conditions. These streptococci were present in large numbers and in pure culture in urine obtained under aseptic precautions directly from the bladder. In the examination of the blood, 9,500 leukocytes were found.



Roentgenogram of right kidney showing calculus (indicated by large arrow) and lower margin of kidney (indicated by small arrows). The roentgenogram was taken by Dr. Lewis Cole, New York.

Although the patient had no febrile reaction, complained of no symptoms of pain or the like, and had no discomfort save the annoyance from increased frequency of micturition, it was evident that there was a well-marked streptococcus[1] infection at some point of the urinary tract—either the bladder, ureter or kidneys.

Treatment of the bladder by irrigation, first with argyrol and later with permanganate solutions which were increased in strength to the limit of tolerance, failed to produce any material change in the situation. An examination by roentgen ray was accordingly resorted to in order to determine the presence of a focus of infection higher up, and as a result of this the presence of an enormous calculus involving practically the entire right kidney was discovered, thereby establishing the diagnosis.

In the course of these examinations and treatment, the patient developed marked symptoms of purpura hemorrhagica dating from the time I first saw her, when she called my attention to vibices produced by the least injury. This condition increased. Vibices developed after scratching, and areas of purpura as large as the palm of the hand and even larger followed injuries that could not even be recalled. No cardiac lesions or arteriosclerosis were found on physical examination. The blood pressure was not above 150 mm. of mercury.

It was thought that the conditions in this case were extremely delicately balanced, and of clinical interest. A calculus had evidently developed insidiously and involved the entire kidney without giving rise to any symptoms or discomfort. Although the patient had complained of a "weak bladder" and had also been treated for cystitis in the course of which one of her physicians had instructed her in the use of the catheter, there is no point in the history of the case that would indicate the beginning of a streptococcus infection. Although married, the patient had never borne children. The relationship of the calcalus to the infectious process in the kidney is thus obscure.

In order to treat this case, a surgical operation was considered necessary to remove the calculus; and in order to safeguard the patient against possible extension of the streptococcus infection at the site of operation, streptococcus vaccines were administered. These were prepared from the autogenous strain as follows:

Streptococci taken from the surface of agar cultures were suspended in salt solution and killed by an hour's exposure at 55 C. Culture filtrates were prepared from the streptococcus growth in human blood serum broth after three weeks' incubation by infiltration through a Berkefeld filter and heating at 53 C. for an hour.

The effect of these two different vaccines was studied very closely in the treatment of this case. The culture filtrates were first used. A cubic centimeter was inoculated, and within twenty-four hours a marked local reaction with extensive purpura at the site of inoculation developed. The area of the reaction was approximately the size of the palm of the hand. A second inoculation in the other arm the next day was followed by a similar but less marked result. The third inoculation was made with the vaccine of bacterial cells from agar in the first arm inoculated. The reaction following this was slight and not accompanied with marked purpura. From that time on the two treatments with vaccines alternated with filtrates of the human blood serum broth culture and the vaccines of the streptococcus cell in increasing doses in each instance. As a result of this treatment it was possible to compare the local effect of the two forms of inoculation which seemed to differ so materially. The bacterial cells never gave rise to reactions of the type produced by the culture filtrates which so closely resembled the typical purpura

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* Read before the American Society for the Advancement of Clinical Investigation, May 11, 1914.

[1] The morphologic and cultural characters of this streptococcus were not unusual in any particular. Capsules were not demonstrable. It was very slightly hemolytic in blood agar, developing greenish colonies. Five c.c. inoculated in rabbits failed to kill the animals, but streptococci from fatal human infections often fail to kill animals.

hemorrhagica that developed spontaneously as the result of injury. Furthermore, during this treatment with these vaccines the occurrence of spontaneous purpura took place with less frequency until finally it disappeared after about three weeks' treatment, and the patient has been free from it ever since.

Following this treatment the patient was referred to Dr. Endicott for surgical treatment. He successfully removed the right kidney, and the operation was followed by a complete recovery.

COMMENT

The case is thus of interest on account of the large size of the stone, its insidious development, and the presence of a streptococcus infection associated with it, doubtless for an indeterminate number of years, without giving rise to febrile reaction or any significant symptom complex save that of purpura hemorrhagica, which might reasonably be attributed to the liberation of toxic substances under conditions of disturbed balance in the protective mechanism of the body tissues. With immunization, the efficiency of the protective mechanism was gradually but completely restored. The culture filtrates used as vaccine proved more active than the vaccines prepared from the bacterial cells.

It is also of interest to note the difficulty of securing cultures by the usual methods of bacterial examination and the necessity of resorting to anaerobic cultivation for this purpose.

The significance of a single clinical observation which admits of no precise interpretation such as is possible in experimental study is extremely limited, but it is certainly suggestive, and it may be possible to determine more accurately the conditions underlying the development of these reactions of purpura when similar conditions can be induced in animals. There is, however, always a break in the analogy between the result of experiments on animals and the phenomena of disease as it occurs in man; hence the importance of this record — an experiment conducted on man.

CITRATED BLOOD IN TREATMENT OF THE PNEUMONIA FOLLOWING INFLUENZA *

RESULTS OF THE USE OF BLOOD FROM CONVALESCENT INFLUENZA PATIENTS

W. W. G. MACLACHLAN, M.D.
Assistant Professor of Medicine, University of Pittsburgh School of Medicine

AND

W. J. FETTER, M.D.
PITTSBURGH

The early days of the epidemic with its fatal and clinically somewhat atypical pneumonia are far from pleasant memories. Any measure, therefore, that gave us a better chance to combat this infection was most opportune. McGuire and Redden[1] treated thirty-seven pneumonia patients with thirty recoveries, six still under treatment and one death, by using the blood serum intravenously, taken from influenza patients that had recovered. They used from 300 to 700 c.c., as was indicated. This meant, of course, that large amounts of blood had to be taken from the donors, up to 800 c.c. of blood being withdrawn from one individual. They noticed that the serum appeared to vary in the amount of immune substance that it was supposed to contain. In fact, ten out of seventy serums clinically failed to demonstrate any evidence of this. Brown and Sweet[2] referred to the use of citrated blood in two cases of influenzal pneumonia with recovery in each case. They gave 90 and 120 c.c., respectively.

The epidemic from the point of view of the medical service at the Mercy Hospital, Pittsburgh, began about Oct. 10, 1918, when we received almost a score of soldiers from the University of Pittsburgh as our first instalment. About three days later the pneumonia commenced, and at the first of the epidemic, as has been observed elsewhere, it was particularly severe. We employed arsphenamin in two pneumonia cases, but there was no evidence that it had any special effect in the clinical course of the disease. One of these patients recovered, with, we feel sure, no thanks to the arsphenamin; the other died about seventy-two hours after the administration of the arsphenamin from the pneumonia. October 17, we began treating our patients with citrated blood taken from persons who had recovered from an attack of influenza.

We chose the citrated blood method as it appeared to us to be more convenient, and further, that possibly one would not need to remove so much blood as would be necessary in order to collect serum in considerable quantities. One must admit that 800 c.c. of blood taken from one just recovering from an acute illness seems to be a considerable amount, but apparently it was followed by no ill effects.

Our technic is simple. It is necessary to have two 50 c.c. Lüer syringes, two 250 c.c. Ehrlenmeyer flasks, one short rubber tube with a fairly large needle attached for taking the blood, and a rubber tubing apparatus which we have used here for giving arsphenamin. This consists of two small rubber tubes, a long and a short one, joined by a triple cock, by which the flow of a solution can be introduced one way or the other. A metal attachment is fitted to the Lüer syringe, and the needle is attached to the short tube. The long rubber tube is placed in the Ehrlenmeyer flask, containing physiologic sodium chlorid (0.9 per cent.) solution, and a small quantity (20 c.c.) is drawn into the syringe. The sodium chlorid solution is first given to make sure that the needle is properly placed in the vein. The rubber tube is then transferred to the flask containing the blood solution (40 c.c. of 2 per cent. sodium citrate in physiologic sodium chlorid solution to from 75 to 100 c.c. of blood), which is slowly injected into the vein.

It is essential to carry out a Wassermann test on each donor. We had no positive reactions among our donors, who were practically all students from the Army Training Corps. Toward the end of the epidemic, when most of the soldiers had gone and donors had become very scarce, some civilian ward cases were tested for use. Strangely enough, half showed positive Wassermann reactions, a point probably well to remember if work of this type is to be applied to civil life.

The matching of blood, iso-agglutination reaction, was studied in the first two cases; but after that, simply on account of the fact that time and assistants were limited, it was not continued. We observed no evidence of any ill effect from our neglect of this procedure. There was no hematuria in the patients

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* From the Mercy Hospital.

[1] McGuire, L. W., and Redden, W. R.: Treatment of Influenza Pneumonia by the Use of Convalescent Human Serum: Preliminary Report, The Journal A. M. A., Oct. 19, 1918, p. 1311.

[2] Brown, W. L., and Sweet, B. L.: Treatment of Influenzal Pneumonia by Citrated Transfusions, The Journal A. M. A., Nov. 9, 1918, p. 1602.

injected. We thought that the amount, never more than 100 c.c. at one time, was probably not conducive to produce ill results. Certainly, if possible, it is better to carry out this agglutination work.

We injected as a rule about 75 c.c. of blood. Four injections were the most we gave to any one patient. We were unable in the first two weeks to inject more than once in twenty-four hours, for no other reason than the lack of time. We think that in all probability a few cases were lost on this account. Latterly, the pneumonia cases seemed to be of a somewhat milder type and reacted more readily. In all we have taken about 100 specimens of blood from donors and have given ninety-three injections to pneumonia patients.

The number of patients treated in the course of a little more than three weeks was fifty-four. They represented entirely the severe influenzal infections—all had pneumonia. The milder types of influenza were very carefully conserved to be held as donors, as we made it a rule not to use the blood from any patient in whom the disease had not come to normal of its own accord. Thirty-four patients recovered and twenty died. It would be well, however, to say that in this twenty there were seven patients that were in the very termination of the pneumonia, showing unmistakable evidence of edema of the lungs. Cases as late as these can in no way be used as an index of the value of any type of treatment. Death occurred in all of the seven within twelve hours after the injection. The accompanying table gives really a more accurate statement of our results. The mortality was 27 per cent.

From the table one can readily see that the earlier the case was treated the better was the chance for recovery. In view of the fact also that the blood given probably had an effect only on the influenzal side of the infection and not against the prevalent secondary invader, the pneumococcus, it is only to be expected that the late cases would show poorer results. It is also to be kept in mind, as Christian[3] has shown, that the presence of pneumonia is a much more difficult problem to solve than the same condition in our ordinary pneumococcus infection of the lung. Undoubtedly, in many of the prolonged influenzal cases with only râles at the bases, particularly at the apexes of the lower lobes, bronchopneumonia was present. When we use the term pneumonia we refer, however, only to those that demonstrated signs of consolidation in the usual sense. We know certainly that some of the cases in the table were of longer duration than is indicated, although by physical signs that was the apparent time.

RESULTS OF TREATMENT BY THE CITRATED BLOOD METHOD

Day of Pneumonia	Recovered		Died
First	18		2
Second	9		6
Third	4	(1 empyema)	1
Fourth	3		4
	34		13

The reaction of the patient effected by the blood transfusion was really about the same as that seen in the use of antipneumococcic serum in lobar pneumonia. The more striking results were observed in those cases in which treatment had been given in the early stages of the pneumonia. At times one injection (from 75 to 100 c.c.) produced a crisis. In most of these cases it took from twenty-four to thirty-six hours to reach the crisis. Lysis was encountered more frequently in those in whom the pneumonic process was of longer duration. In these also, two or more injections were frequently necessary. At times, after the second injection, an almost typical crisis was observed. In a certain percentage of the patients that recovered, almost one quarter of them, a mild, febrile reaction (from 99 to 100 F.) from one to three days was noted after the case had come to normal. Absorption from focal areas in the lung during their resolution is the most likely explanation of this temperature elevation. We noticed a fall in temperature, following almost every injection given. In fact, we had only one case in which there was no change in this regard. We considered that in all probability we were dealing with a pure pneumococcic infection, secondary to the influenza, and hence no impression was made on the condition. A case similar to this one that had reacted in a like manner after two blood transfusions dropped by lysis after 50 c.c. of antipneumococcic serum were used.

A certain percentage of the transfusions, usually the first, produced a chill with a temporary rise in temperature and a subsequent fall. In seven patients the chills were sharp, lasting from ten to fifteen minutes. About an equal number (six) felt a little chilly, but had not a definite chill. There was no relation, whatever, between the chills and the mortality. Serum or blood subcutaneously (from 0.5 to 1 c.c.) would probably lessen this rather disagreeable after-effect, in the way suggested by Cole in the use of the antipneumococcic serum.

There is one other point to be watched. In those patients who were rather dyspneic or cyanotic or who had respiratory discomfort, as from pleural pain, the injection had to be given very slowly; otherwise these symptoms were temporarily increased.

The temperature reaction, however, should not be taken as the whole guide. As a rule, it corresponded to the condition of the patient. As the pulse rate in practically all of our pneumonic cases was of the relatively slow type (from 80 to 100), but little information was to be received from this source as to the change in the patient. The general appearance and comfort of the patient was noticeably improved in those cases reacting favorably. From the physical signs, we have seen a dry, consolidated area, in the course of twelve hours after an injection, present all the signs of a lung in resolution.

During the height of the epidemic when we had more than 100 soldiers in the wards at one time, the problem of obtaining donors was a very simple one. There were always cases in the convalescent stages. Toward the end of the epidemic, however, the donor problem became somewhat more difficult, as our patients who recovered were soon restored to an Army convalescent home. It is very much easier to carry out this form of treatment among soldiers, particularly when one is dealing with considerable numbers, than among civilians even in a hospital. At first we believed that there was considerable difference in the donor's blood in regard to the supposed immune body content, as had been suggested by McGuire and Redden.[1] That they would vary in this property is only logical, but we are rather doubtful at the present time that this is really the explanation of the poor reactions in certain cases. In our opinion it is more likely that the secondary invading organism had begun to develop its lesion in the lung and that a new and subsequently fatal factor was added. In this district it is almost entirely the pneumococcus. From the data at hand, we cannot state that there is a noteworthy difference among donors, in regard to the clinical results produced by the injection of their blood. Those having a leukopenia or a leukocytosis and those who pursued a mild or severe clinical course seemed about the same.

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[3] Christian, Henry A.: Incorrectness of the Diagnosis of Death from Pneumonia, The Journal A. M. A., Nov. 9, 1918, p. 1565.

The leukocyte count followed very closely a general rule. A leukopenia of from 3,000 to 5,000 was present at the onset of the influenza in a vast majority of cases. With the onset of pneumonia a very moderate leukocytosis, one of from 9,000 to 12,000, occurred in the majority. At times it was higher. We had, however, but eight counts between 20,000 and 30,000 in the 150 counts estimated. This finding is in marked contrast to that observed in the lobar pneumonia.

In some, particularly the very severe pneumonia cases, the leukopenia persisted throughout the course. A drop in leukocytes was a serious prognostic sign during the course of the pneumonia. We have very slight evidence of an influence on the leukocyte count by the blood transfusion. In two or three cases the increase was well marked, from 5,000 to 10,000, but in the remainder there was very little change, whether we began with a leukopenia or a moderate leukocytosis.

SUMMARY

The use of citrated blood from convalescent influenzal patients administered to patients when pneumonia followed the influenza appeared to have a decided beneficial effect, particularly if given early. Beyond the third day of the pneumonia it was of little value.

That the citrated blood establishes an immunity to *B. influenzae* is inferred but not proved. Many additional factors may play an important rôle. Extensive work along these other lines was conducted by the University of Pittsburgh during the recent epidemic, a report of which will appear later.

Suggestion by the Patient.—We are often misled by our patient's interpretations of his own case. In other words, we are human and subject to the power of suggestion. Often we are informed that they are suffering from heart disease, kidney or liver disease, or appendicitis, constipation or diarrhea, and we listen to their story and become hypnotized ourselves and follow along the line of the patient's suggestions. They are anxious to tell somebody their symptoms and if we are good listeners they are willing to pay us for our trouble and time for listening.—President's Address, Minnesota State Medical Society.

Clinical Notes, Suggestions, and New Instruments

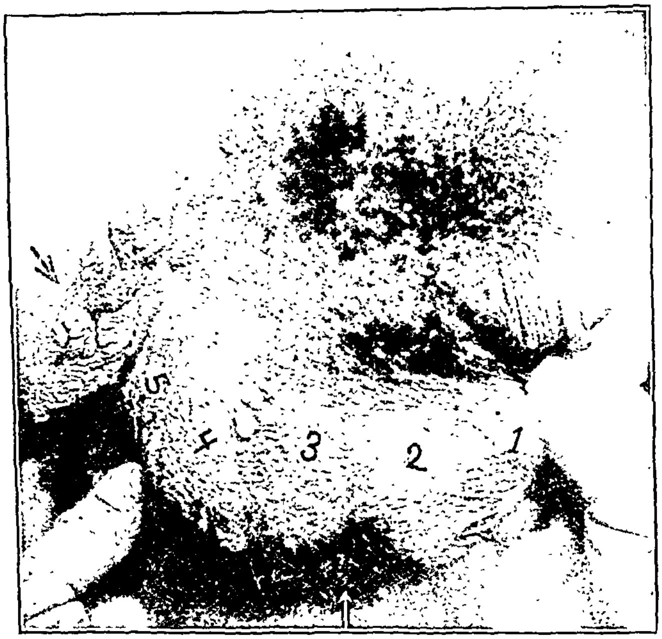
ONE MAN WITH FIVE TESTES: REPORT OF CASE

George H. Day, M.D. (Louisville)
Major, M. C., U. S. Army; Camp Venereal Officer.
Camp Pike, Little Rock, Ark.

This case was referred to the urologic department, July 1, 1918, for confirmation by Major H. C. Loos, chief of the surgical service at Camp Bowie.

The man in question was discovered by Major Loos at a local garage, where he was employed as a mechanic. After questioning the man and hearing his history, Major Loos was interested enough to have him report to the base hospital for examination. The case has since been presented to the Clinical Society of the Base Hospital, Camp Bowie, for examination.

G. E. M., aged 19, of San Benito, Texas, presented a negative family and personal history other than that his father had died of typhoid ten years before.



Scrota with five testes: white arrow points to line of demarcation between scrota; black arrow, rudimentary scrotum; 1, 2, 3, 4, 5, testes.

He had had gonorrhea twice, the first time at 17 years, and again six months before we saw him. The first time he knew he was other than normal was two years before, when on attempting to enlist in the service, he was rejected at Brownsville, Texas, by the recruiting officer of the Twenty-Sixth Infantry. At that time he was told that he was ineligible on account of severe varicocele.

He attempted to enlist again at Oklahoma City one year later with the same result.

Three months before he again attempted enlistment at Fort Worth, Texas, and was again rejected with a diagnosis of varicocele and hydrocele.

The man was well nourished, and aside from being overdeveloped, with the contour of the arms rather feminine and the pelvis and hips somewhat large, he appeared to be normal.

It was immediately noticed that the scrotum was much larger than usual. The penis was about twice the size found in boys of this age.

On retracting the scrotum it was noticed immediately that the young man had another normal scrotum and perhaps a third, which was rudimentary in origin, to the right of the normal one. On further examination four normal testes were discovered, two being in each of the two scrota and another atrophied one being in the redundant tissue posterior to the second pair. The third or rudimentary scrotum in the groin (right) contained no trace of the sixth, and may possibly be intra-abdominal. The line of demarcation in the tissue of the scrotum was most marked and showed forcibly the fact of the scrota.

When he assumed the knee-chest position, the posterior view strikingly brought out the line of demarcation between the scrota. Aside from an overabundant sexual desire he said he had never noticed anything abnormal in his sexual life.

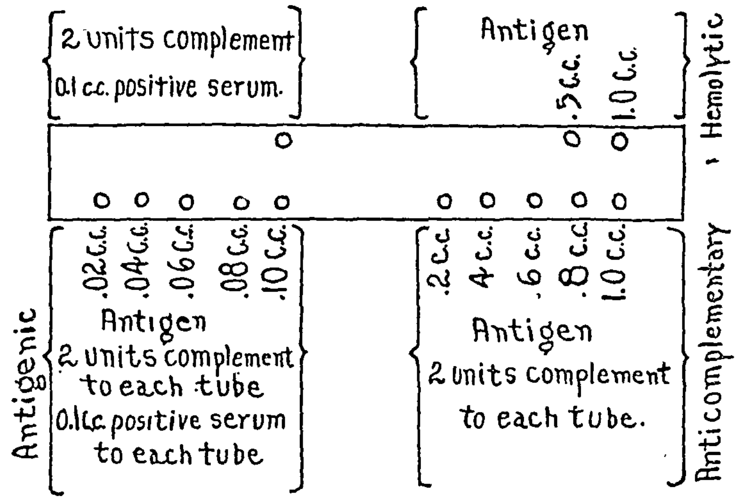
We have not had the opportunity of looking up the literature on the subject and are presenting it simply as an anatomic freak. Certainly the man is possessed with four normal testes and cords, a fifth atrophied testicle and perhaps a sixth which is undescended.

It would be interesting to see a section to note where the attachment of the second set joins the vas of the first, and it is not at all improbable that he has also multiple seminal vesicles, although only one prostate is palpable.

A SHORT METHOD OF MAKING NOGUCHI ACETONE-INSOLUBLE ANTIGEN

G. A. Magnusson, M.D., Seattle

In order to gain the most information from the Wassermann test, more than one antigen should be used in the "set up." One of the antigens so used should undoubtedly be the Noguchi acetone-insoluble, as it will give positive reactions with a higher percentage of syphilitic serums than the alcoholic extracts, while it is less likely to give false positive reactions than the more sensitive cholesterinized extracts. But its preparation requires so much time that this becomes quite a factor in a laboratory where considerable quantities are used. With a view of hastening the process of extraction and evaporation we tried this at higher temperatures and find that boiling temperature in no way interferes. In this way we can prepare and titrate an antigen all in one day.



"Set up" used in titration.

PROCEDURE

To one part of finely minced beef heart, nine parts of commercial ethyl alcohol are added. (We have recently tried the extraction with denatured alcohol and this seems to do as well. As alcohol is denatured according to varying formulas, some may not be usable.)

This is boiled in a water bath for from ten to fifteen minutes, and filtered while hot.

The filtrate is evaporated over a boiling water bath until the alcohol and water are removed.

The residue is extracted with a small amount of ether.

The ethereal extract is poured into a centrifuge tube and centrifuged until the supernatant liquid is perfectly clear. This is added to ten volumes of chemically pure acetone.

The precipitate is allowed to settle. The greater part of the acetone is decanted, and the rest is poured into a clean graduated centrifuge tube and centrifuged for five minutes at moderate speed, the acetone poured off, and drained thoroughly.

To the precipitate, ten volumes of chemically pure methyl alcohol are added, and the mixture is stirred with a glass rod until as much as will dissolve has gone into solution and then centrifuged until the supernatant liquid is perfectly clear. This is poured off and kept in a clean, well stoppered bottle.

TITRATION OF ANTIGEN

An emulsion is made with one part of this stock alcoholic solution and nine parts of physiologic sodium chlorid solution.

Titration is performed for antigenic, anticomplementary and hemolytic properties.

The accompanying chart illustrates the "set up" used in titration.

To each tube, physiologic sodium chlorid solution is added to bring the volume to 1.5 c.c.

Incubation is performed for one hour.

To each tube 0.5 c.c. of sensitized sheep cell suspension (5 per cent. sheep blood cells and 2 units of amboceptor) is added.

Incubation is performed for one hour.

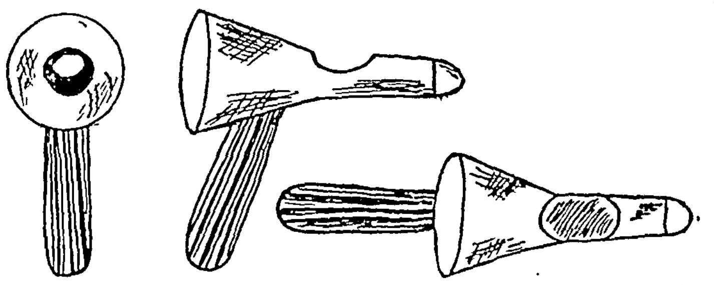
Most of the antigen preparations we have made in this way have had an antigenic unit of 0.02 c.c. of the 1:10 emulsion, while a full cubic centimeter was neither hemolytic nor anticomplementary.

TREATMENT OF CHRONIC GONORRHEAL SKENITIS WITH THE ELECTRIC CAUTERY*

Chester B. Moore, B.S., M.D., San Francisco

A not uncommon pelvic focus for the lodgment of the gonococcus is the gland of Skene. In this minute epithelial pocket such an infection may persist indefinitely in spite of local applications. Even if the ducts are exposed and medicinal injections directed into them with a hypodermic needle, the infection may continue without interruption. Often it is possible to express a few or several drops of pus week after week, and month after month, along with such oft-repeated treatment. Furthermore, this minute gland may remain in a chronic state of suppuration without a local symptom, the focus of infection being discovered only in the course of a general pelvic examination. Unless one makes an attempt to express the contents of these ducts, this focus may be entirely overlooked. In this type of gonorrheal infection of Skene's gland nothing less than the complete destruction of the gland will terminate the disease in this locality. This destruction may be easily attained by the use of the thermocautery.

The operation is quite easy and simple, provided one can get a good exposure. For this purpose I take a Kelly endoscope that has been cut off at the proper length so that it will not extend into the bladder, close it with the olive tip, and cut out a small window as shown. I have found that a No. 8 endoscope serves the purpose very well. This makes an instrument, a skenoscope, with a handle that is directed upward out of the way; the entrance is expanded to hold back and protect the labia; the tubal portion protects the urethra except at the point of attack, the gland, the ducts of which protrude into the window cut for the purpose. Under local anesthesia, it is possible to pass a small wire thermocautery into the gland without fear of cauterizing any other place than that desired. In order to obtain good light, I have had a small post so placed on the handle that it will carry an E. S. I. light directed toward the aperture. However, any means for obtaining good light will do.



Front, side and top views of instrument devised for use in the treatment of chronic gonorrheal skenitis with the electric cautery.

To cauterize the gland, as much discharge as possible is expressed from the ducts. The urethral entrance is cocainized with a 10 per cent. solution for about ten minutes. The instrument is passed, handle upward, until a good exposure is obtained. The entrance of the ducts is sought with a large size hypodermic needle, from which the point has been filed, or with the wire contained in the tubal portion of the instrument. The needle or wire is passed along the duct to the base of the gland. They will act as a guide to direct the passage of a small, pointed, electric thermocautery until as much tissue as desired has been destroyed. Up to the present, no discomfort or ill effects have followed this procedure. If the first operation has for any reason been unsuccessful, it may be repeated. Also, it is possible to cauterize the glands without passing a wire for a guide.

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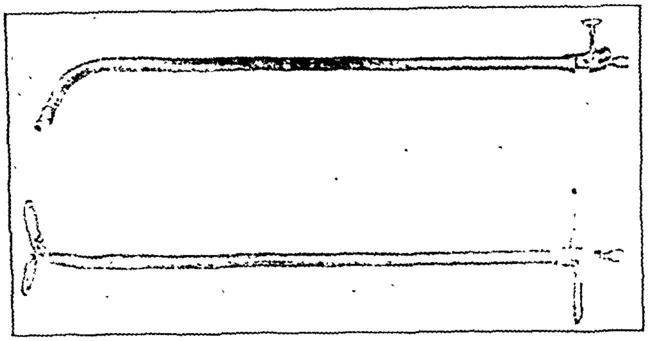
* From the Division of Obstetrics and Gynecology, Leland Stanford Junior University School of Medicine.

A NEW PROSTATIC TRACTOR *

A. J. Crowell, M.D., Charlotte, N. C.

While performing a seminal vesiculectomy some time ago, it occurred to me that the operation could be greatly facilitated by the use of a tractor inserted into the bladder, through the urethra, which has the same curve as that of a sound. For this purpose I therefore designed the one shown in the accompanying illustration.



Prostatic Tractor.

It consists of two fenestrated blades attached to shafts, the inner one of which has a cable in the curved portion which allows one of the blades to revolve around the other. There are two handles at the outer end of the shaft which regulate the rotation of the blades after insertion into the bladder through the urethra. When inserted, the handles are rotated from each other to open the blades within the bladder. The gland is thus pulled into the operative field and at the same time the handle of the instrument is out of the way of the operator.

A glance will show the superior advantage of the curve in any operation on the perineum when a guide is needed to locate the urethra, prostate, seminal vesicles or bladder. We use it as a routine in perineal prostatectomies and find that by its use it is much easier to expose the prostate, and the danger of getting into the rectum is greatly diminished.

After the tractor is inserted and the blades opened, slight pressure on the handle by an assistant will pull the gland well into the operative field. It is a better guide than the sound ordinarily used for this purpose. It gives not only a urethral guide that is fixed but also a definite location of the prostate gland and membranous urethra, which are firmly held in one position while the gland is exposed.

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* From the Crowell Urological Clinic.

Elimination of Inhaled Dust.—In a paper read before the Institute of Mining Engineers on dust inhalation and the health of miners, J. S. Haldane, F. R. S., among other things said that investigations had shown that coal and shale dust were rapidly eliminated from the air passages by special dust collecting cells which phagocyted the dust particles and then carried them away. This, however, does not occur to the same extent with quartz dust, and whereas miners in coal and shale suffer practically no injury from the dust itself, quartz mining results in serious respiratory difficulties, both on account of the sharpness of the dust particles and because of their defective elimination in the manner described. The widespread introduction into coal mines of stone dusting as a means of preventing coal dust explosions has directed attention to the possibility of injury from this cause.

Military Medicine and Surgery

THE TREATMENT OF HYSTERIA

SUCCESSFUL RESULTS OF A RAPID REEDUCATION METHOD

JULIAN MAST WOLFSOHN, M.S., M.D.
(San Francisco)
Captain, M. R. C., U. S. Army; Assistant Professor of Medicine, Leland Stanford Junior University School of Medicine
LIVERPOOL, ENGLAND

The world war has provoked such an immense number of the various types of hysterical disorders that the conception of hysteria can now be studied more easily from every aspect. It has taught us to look on what we ordinarily designate "hysteria" as merely the outward sign, the symptom, of the fundamental causative factor—the hysterical psychic background. So, when we speak of the treatment and cure of these patients, we wrongly say we have cured the hysteria; we have cured only the hysterical symptom. What most physicians in their ardor have left untouched and untreated is the hysterical psyche which gave rise to the symptom which has incapacitated the patient. This is important to remember when the question arises of returning a hysterical subject to the same environment that originally caused the hysterical symptom.

The war has also shown us that hysteria seldom, if ever, occurs during violent emotion, but rather during the contemplative stage succeeding the emotion; also that there is no essential difference, except perhaps in the number and in the intensity of the emotion produced, between the hysteria of warfare and that of civilian life.

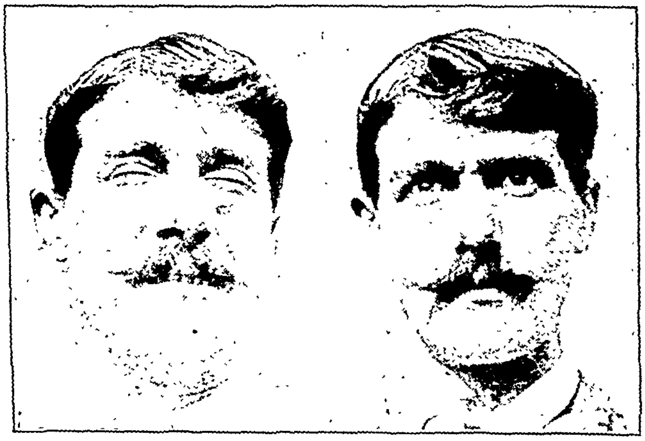

Fig. 1.—Patient before and after treatment for hysterical blepharospasm.

Babinski has so far offered the clearest and most concise definition of hysteria: "Hysteria is a pathologic state manifested by disorders which it is possible to reproduce exactly by suggestion in certain subjects and can be made to disappear by the influence of persuasion alone." Instead of "hysteria," which is obviously a misnomer, he has substituted "pithiatism," which means the possibility of being cured by the influence of persuasion.

There have been published volumes on the classification of hysterical disabilities, but very little on their treatment. In Babinski's book on hysteria, for example, eight pages are devoted to the treatment and 252 to other desiderata on the subject.

It is with the idea, therefore, of presenting to the American physician, especially to him who is going into active service, the results of my studies on this subject in British and American hospitals in England during the past year, and to give the outstanding features I have learned for the successful and rapid cure of this class of case, which accounts for an important percentage of the discharges from the fighting armies, that this paper is published.

This paper is based on 573 cases of hysteria treated by me in British and American hospitals; in the former are included those hysterias largely due to "shell shock," in the latter those found in ordinary civilian life. Of these, 550 patients, or 95 per cent., were cured of their disabling symptoms completely.

I shall not deal with the causes or analysis of the different types of hysteria, nor consider the subject of relapses, of which I am now collecting full data. The symptoms included in the 573 cases are given in the accompanying tabulation.

Occasionally more than one hysterical symptom would be found in the same patient. This has swelled the actual number of symptoms treated to 605.

Only twelve of the 550 patients had external wounds complicating the picture. In only two patients were there any concomitant organic nerve changes noted.

In more than 90 per cent. of the cases the cure was accomplished within the first twenty-four hours. The extremes varied from five seconds in some of the aphonics to more than seventy-two hours in some of the dysbasias of long standing.

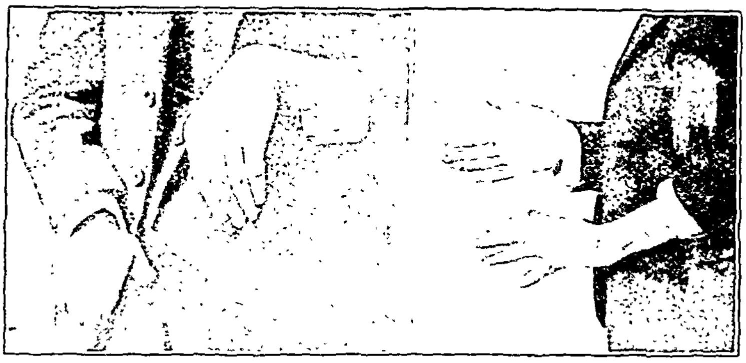

Fig. 2.—Functional flaccid wrist drop in a case of hysterical monoplegia of ten months' duration cured in ten minutes.

The most important part of the treatment is the confidence of the physician in the correctness of his diagnosis and in his ability to produce a cure. This air of assurance spells immediate success. No one can convince others who himself is unconvinced.

SYMPTOMS INCLUDED IN FIVE HUNDRED AND SEVENTY-THREE CASES

	Cases		Cases
Mutism	84	Tics	8
Deafness	30	Astasia abasia	4
Aphonia	175	Stasobasophobia	20
Stammering	118	Dancing gait	6
Blepharospasm	2	Hemiplegias	9
Blindness	6	Tremors	40
Monoplegias	46	Photophobia	2
Paraplegias	54	Double platysma spasm	1

One can divide the various kinds of treatment of hysteria into two groups, the slow and the rapid. Among the former are:

1. The purely reeducative methods, for example, breathing exercises and singing in the stammering cases, and the use of mechanical machines, massage, etc., in the paralyses. I have watched stammerers thus treated for as long as three months and paralytics given electrical treatments for six months by "kindly" nurses and sympathetic teachers with very gradual improvement, if any, and have repeatedly cured these patients of their symptoms in one sitting of from one-half to one hour.

2. Psychotherapy, consisting of psychanalysis. This is impracticable for the hysterias of warfare at this time. It often accomplishes much in the psychoneuroses, in which the emotive processes are in the ascendency, but there are not enough psychoanalysists to deal with the cases of one large hospital for this form of disease. The method is too slow to be of practical use when dealing with such large numbers of patients. One must have recourse to rapid methods by which the patient is quickly cured of his symptoms after a short preliminary psychologic survey. After his cure, the patient is more willing to discuss causes and he often tells things surprisingly pertinent when the confidence in his physician is supreme.

Thus an early accessibility to the patient through a rapid cure is accomplished by any of the following methods, which include:

1. Hypnotism. This was used extensively, especially at the beginning of the war, but its use has been discontinued by most physicians on account of the frequent relapses and otherwise indefinite results. However, hypnotism is very valuable in treating insomnia, and I have used it successfully in combating terrifying dreams and hysterical convulsions.

2. General anesthesia with ether, combined with strong suggestion in the excitement stage. This is still frequently used, but I believe that on account of the discomfort to the patient, simpler methods should be employed first. The method finds its most successful use in the intractable cases of hysterical deafness.

3. The continuous bath. This is reputed to have been quite successful in the treatment of certain algias and motor disturbances of hysterical origin.

4. Suggestion. The best of all treatments in my hands has been strong suggestion, reinforced by some mechanical agent which will assist in relieving at least some of the disturbed functions. This is easily administered with the aid of faradism or galvanism, and the results are quick and complete. Thus Yealland has aptly described the three principles he employs. (A) Suggestion, in which the patient is made to believe he is curable and from this springs the belief that he will be cured. This is briefly done and is followed by (B) Reeducation, which is continued without pause until the disordered functions are brought back to normal. (C) Discipline, in the form of demanding a military atmosphere and regular duties. This breaks down the unconscious resistance of the patient to the idea of recovery. The last is the real preventive of fixed ideas and is a most constructive policy.

SPECIAL TREATMENT FOR THE VARIOUS DISORDERS

Hysterical Mutism.—All of the eighty-four patients treated were cured within an hour, some requiring only a few minutes. In the uncomplicated cases of mutism, strong suggestion combined with faradic stimulation of the sides of the neck in increasing strength, the patient at the same time being shown how to produce the vocal sounds "e," "ah," "a," etc., usually suffices to produce articulation quickly. The patient then learns how to adjust his tongue to utter a squeak, which, as a rule, is rapidly followed by letters, especially the labials and dentals, then numbers, the months of the year, and finally sentences. If a hypesthesia or anesthesia over the trachea is found before treatment, it is used as a lever for further suggestion because the disturbed sensation can be easily removed by the faradic brush.

Case 1.—J. J. L., rifleman, who had hysterical mutism ten months, was cured in one minute by suggestion, combined with faradism to the sides of the neck. During an air raid in July, 1917, an aerial torpedo burst 50 yards away from the patient. He was rendered unconscious and cannot remember how long he remained so. He had been mute since then and could not even protrude his tongue. He was treated in several hospitals without success.

These patients with mutism (and this is true for all hysterical symptoms) who have passed from hospital to hospital, receiving suggestion after suggestion, who have seen many physicians or who have had the most varied and unsuccessful treatment, are the most difficult to cure on account of the fixation of the idea of incurability. The physician has to have an ever-ready plausible answer for myriads of questions, and especially to statements that the sufferer has had all these treatments before.

Hysterical Deafness and Deafmutism.—If deafness is associated with mutism, it is well to treat the deafness first. The mutism often disappears soon after the return of hearing. Sixteen of the thirty cases of deafness were accompanied by mutism. In only one was there failure to cure, and this was undoubtedly due to interruption of the treatment, and its continuation by a third party.

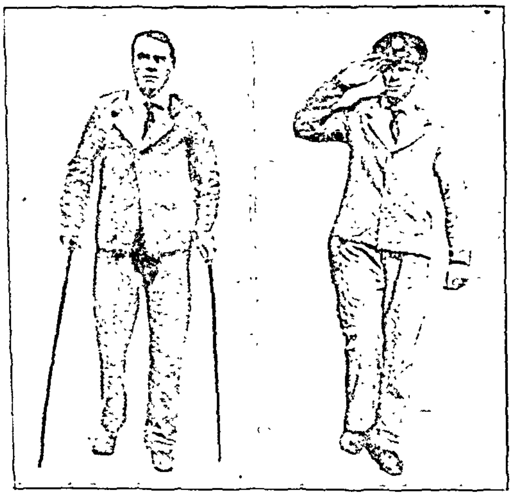

Fig. 3.—Patient with rigid hysterical paraplegia of nine months' duration cured in forty minutes.

It is well at first to write down the orders for the patient, so that he will understand and pay attention to them. The deaf hysteric can usually hear very high-pitched and shrill sounds which he is unable to interpret.

Inserting a stethoscope into the ears of the patient, different tuning forks of various vibration lengths are quickly and successively held at the bell of the stethoscope and the patient told to nod when he hears something and to reproduce the sound heard. When he can finally do this for low notes, the voice of the operator is then substituted for the tuning forks and, beginning with a loud voice, the distance between the patient and operator is gradually increased. Then the loudness and pitch of the voices are diminished. Finally the stethoscope is removed and one ear is blocked. The patient is told to repeat quickly the things he hears while the operator rapidly changes his voice from loud to soft and then to a whisper, while he gradually increases the distance from the patient until the latter can hear the whispered voice from 10 to 20 feet away. If one tests the bone conduction by applying a tuning fork over the mastoid region, the patient receives some intimation that he is not completely deaf. This is used as an auxiliary suggestion, however, and is followed by the treatment outlined above.

Case 2.—Private H. H., aged 26, who had hysterical deafness four months, was cured in fifteen minutes. He was in a dugout when a high explosive shell burst outside. He was knocked unconscious and remained so until he awoke the next day in a casualty clearing station and found that he was deaf and dumb. Several days later he regained his speech but not his hearing. He had considerable temporal headache, but there were no objective signs of injury to the auditory apparatus. He had been treated in three hospitals in France and England without improvement. Examination revealed bone conduction to high pitched notes only. No air conduction could be elicited. The treatment was carried out as outlined above, and the patient could hear the whispered voice at 15 feet in fifteen minutes.

Hysterical Aphonia.—One hundred and seventy-five aphonics were treated with 98 per cent. of cures. In many of these cases the symptoms followed gassing, with its subsequent laryngitis and aphonia. After the inflammation has subsided, the aphonia continues, sometimes indefinitely. Often a shock or sudden emotion, such as a terrifying dream, falling out of bed, or even a severe reprimand may suffice to bring about a "cure."

The vocal cords of an aphonic should always be carefully examined prior to treatment. If these look normal other than failing to approximate equally on attempted phonation, it is well to tell the patient that he is about to get his voice back immediately. Then, very often, simply gargling with a 10 per cent. salt solution is sufficient for the patient to be able to make an articulate "ah." He is then quickly reeducated in mutism. Sometimes tickling the soft palate with the tongue held protruded will produce the same result, but these failing, faradic stimulation of the sides of the neck, as in mutism, practically always cures in a few minutes.

Case 3.—Private B., aged 19, who had hysterical aphonia ten months, was cured in three minutes. The patient lost his voice in May, 1917, following gassing and a cold. He had not spoken above a whisper since. He had not been worse or better since the onset. He suffered from easy fatigue and frontal headaches, and trembled in air raids. He feared dark places and heights. His concentration was poor. He always possessed a nervous temperament and had two or three bad frights in childhood. He was a total abstainer and suffered from depression of spirits. This patient was treated with the roller faradic current.

Hysterical Stammering.—In some cases, as in mutism, the patient is cured of his original hysterical symptom either spontaneously or by incomplete treatment, and then lapses into another and worse condition—stammering. In fact, the usual sequence of events is unconsciousness, mutism, aphonia and stammering, although any of these may occur without the others having been present first.

One hundred and eighteen cases of stammering were treated. While most of these patients (90 per cent.) were cured at the first or at the most at the second sitting, some were not cured till the third or fourth—especially those with marked tremors or fear reaction, or those who were easily startled or had other signs of emotivity About 50 per cent. of these cases stammer a little for some months afterward when they become embarrassed or excited; in other words, so long as there is any emotivity left. In letters I am receiving from patients treated, they tell me this symptom gradually wears off and that they are regaining their self-possession.

Case 4.—Private B., aged 23, who had hysterical stammering fourteen months, was cured in ten minutes. Jan. 15, 1917, the patient was blown up. He was unconscious for two or three days, followed by mutism for several days, which was relieved spontaneously and was succeeded by marked stammering, which persisted in spite of many attempts at cure by various methods. The family and personal histories were negative. He was cured by suggestion and faradism.

Hysterical Blepharospasm.—Both of the patients with blepharospasm were cured within a minute each by the application of a faradic current over the supra-orbital notch first on one side and then on the other, immediately after strong suggestion. The blepharospasm was the result of gassing and photophobia. In one case (Fig. 1) the blepharospasm had been present seven months and was cured in ten seconds.

Hysterical Blindness.—Of hysterical blindness, seven cases were treated and cured at one séance each. In these cases the intelligence and cooperation of the patient are essential for the rapid cure.

Case 5.—Sergeant L., aged 28, who had hysterical blindness four months, was cured in two hours. A letter to his nurse explains the treatment tersely and lucidly.

> Dec. 3, 1917, I was blown up by a German 11-inch shell while bringing ammunition out of the line, and within a few days I completely lost my sight. I was treated at the —— Hospital for two months. I had electric treatments for about ten days. I was forbidden to smoke and had both eyes bandaged for some days. No good results were obtained, and I was sent to —— Hospital, Feb. 15, 1918. Here I was examined by three or four doctors and remained there for three weeks. My sight was no better and in consequence I was sent to —— Hospital. I was again treated by four or five doctors with the electric apparatus for about a month, but no improvement. I had lost confidence and was beginning to lose hope of ever being able to see again. Then Captain W. visited me and after explaining what was the matter with me and the reason I could not see, he treated me with the electric power for about an hour, leaving me just before 2 o'clock; but being interested in my case, he came back, explaining to me that he felt sure he could benefit me that afternoon. He gave me electric treatment again and after about half an hour I gradually was able to see first a light, and then his hand moving in front of my eyes. Further treatment and I was then able to see out through the window in my ward and plainly see a house and describe it in detail. I was, in fact, able to see quite well after his treatment that afternoon. Although the treatment was a little painful, I had every confidence that the doctor was doing his utmost for me, and getting back my sight was worth ten times the pain and discomfort.

This patient from complete blindness had $^{20}/_{20}$ vision at the end of two hours' treatment. There was no resulting constriction of the color fields. Three months later, a letter from the sergeant says his eyesight is as good as it ever was.

The hysterical paralyses of the motor apparatus treated include forty-six monoplegias, fifty-four paraplegias, and nine hemiplegias. The treatment was practically the same in each of these cases, although it was found that the longer the duration of the paralysis, the more difficult was the cure. If, on the other hand, sensory disturbances, such as anesthesia or dysesthesia (which is always associated in the lay mind with the loss of power) were found, it was easy to remove the sensory disturbance by suggestion or by the faradic brush, or by both, and then resort to rapid reeducation. As a rule, the sufferer from a hysterical paralysis, sensory or motor, gives a history of its onset shortly after a slight wound or having been blown into the air, or even landing against the wall of the trench, experiencing a pain in the back or numbness in the affected extremity.

Case 6.—Lieuenant B., aged 26, who had hysterical hemiplegia eighteen months, was completely cured in forty minutes. In September, 1916, he was knocked on the right side of the head and was unconscious for ten days. On regaining consciousness he was paralyzed on the left side of the body. There were no sphincter disturbances. Speech was normal. He felt as if the whole side of his body were dead and did not belong to him. He could not move the muscles of the left arm or leg. Practically no improvement occurred until June, 1917, when he was knocked over by a tram and was unconscious for two hours. On the following day he regained some of the power in the muscles of the left side of the body, but the numbness remained. On examination, loss of superficial and deep sensibility of the left half of the body to the midline was found. The deep and superficial reflexes were normal on both sides. The fields of vision were normal. The patient was treated by electrical suggestion. This patient is a professional musician and the same day, after the cure, practiced his violin for five hours, the first time in eighteen months.

Case 7.—Gunner J. W., aged 25, who had hysterical paraplegia five months, was cured in forty-five minutes. The onset occurred in October, 1917, while the patient was in a bivouac. An aeroplane dropped a bomb just behind him. After the explosion he found his friend with his head half severed from the body and he remembers no more. He slept badly, had continual frontal headache, and when he thought of the unfortunate episode he went into a general shaking convulsion. He had not been able to stand for six months. Neurologic examination revealed both legs very rigid, and any attempt at voluntary movement resulted in marked coarse general tremor. The reflexes were increased throughout. The Babinski reflex was negative on right and left. There were no sensory nor sphincter disturbances. After continuous treatment for three quarters of an hour the patient was able to walk normally.

Case 8.—Private S., aged 22, who had hysterical monoplegia five months, was cured in five hours. In December, 1917, he had cerebrospinal meningitis, for which many lumbar punctures were performed. During one of the punctures he felt a numbness in the left leg. He was able to perform his regular duties until March, 1918, when, during a march, he felt dizzy and fell unconscious to the ground. On recovering consciousness two hours later, he was unable to move a muscle in the left leg below the groin. It felt "as if it did not belong to him." On admission to the hospital, he walked with the aid of two crutches and dragged the left leg as if it were stuck to flypaper. Deep and superficial sensibility were profoundly disturbed below the level of the umbilicus front and back, to the left of the midline. Articular sensibility and likewise vibration sense in the same area were not perceived. The knee jerk, Achilles jerk and superficial abdominal reflexes on both sides were normal. The Babinski reflex was negative on both sides. There was complete inability to move a single muscle of the left leg below the groin. The patient was treated by suggestion and faradism for five consecutive hours, at the end of which time all sensory disturbance and muscle weakness had disappeared. He now walks normally.

Sometimes a true hysteria follows a severe wound. In this case the hysterical symptoms are superimposed on the organic but do not disappear *pari passu* with the healing of the wound. It is here that the greatest difficulties in diagnosis try the physician.

Case 9.—Captain W., aged 28, who had an organic lesion of the brachial plexus with hysterical paralysis of the upper extremity, after healing of the wound, for twenty-four months, was cured in twenty-five minutes. He had received a gunshot wound through the left infraclavicular space, the bullet emerging through the scapula behind. An aneurysm of the left subclavian artery resulted, which was later ligated. The brachial plexus was also injured, but the torn nerves were sutured. The whole left arm was paralyzed, but the patient gradually became able to move his arm so that with great effort the fingers could be made to twitch. Similar movements of the forearm were possible, after effort. Examination of the left arm revealed practically no radial pulse, and a slight general atrophy. The reflexes were all normal. There was marked general muscular weakness. Sensibility was impaired for touch and pain below the shoulder girdle. In twenty minutes the patient was practically cured, except for a slight weakness of his little finger, which remained in slight abduction. He was returned to his command on his urgent request in two weeks.

Hysterical Disturbances of Gait.—Various authors have described and given names to different types of disordered gaits. So far as treatment is concerned, it is the same in each case, namely, strong suggestion with or without faradism, followed by rapid reeducation. In this series there were thirty cases, including four by astasia abasia, twenty of stasobasophobia, and six of dancing gait.

Case 10.—Private J. P., aged 20, who for five months had stasobasophobia, with relapse after violent emotion, was cured in seven minutes. In September, 1917, he was blown up and was unconscious for twenty-four hours. He awoke in a casualty clearing station. He was unable to speak, had tremors, walked in his sleep, had terrifying dreams and suffered from severe occipital and frontal headaches. A few days later he recovered his speech, but talked with a stammer. He was treated by hypnotism and electricity and was sent back to his unit in December, 1917. On his journey back, which occupied six days, he was spending the night in a rest camp when a bomb dropped and exploded within a few feet of the patient while he was in bed. He was extricated from the wreckage, but was unable to walk. He was dazed, stammered, and complained of pains in the head and in the base of the spine. His legs felt numb and cold. He said he received "very harsh treatment with electricity and very little improvement" in two hospitals. He cured himself of stammering by reading aloud. Examination was negative except for inability to maintain the erect posture, and fear of falling unless he had two crutches to aid him to stand. All muscular movements were executed fairly well in bed. A five minute "straight talk" and two minute treatment with the faradic tetanic current sufficed to enable the patient to walk and to run in a perfectly normal manner. That day the patient took a 2 mile walk after lunch.

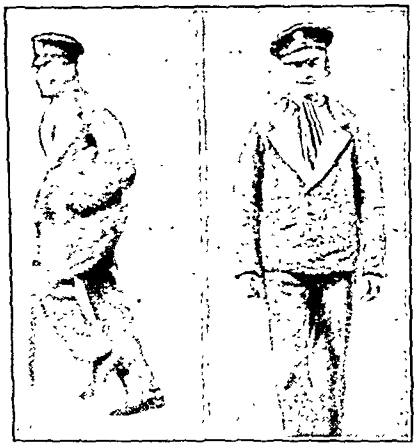

Fig. 4 (Case 11).—Patient with dancing gait before and after treatment.

Case 11.—Private G. A., aged 21, who had dancing gait nine months, was cured in twenty minutes. The patient was blown up and was subsequently unable to stand for several weeks. Since then he had great difficulty in maintaining his balance even with the aid of a cane. He staggered a few steps to the right and as many to the left. At times he would halt suddenly and take a double shuffle to the front. When he lay on his bed he could execute all movements of the lower extremities very well. There were no neurologic disturbances of note. With the faradic current and strong suggestion the patient was able to get on his feet in ten minutes, and in ten more minutes of reeducative exercise he was walking.

Hysterical Tics, Tremors and Convulsions.—The forty cases of hysterical tics and tremors represented all the stages from a slight, coarse tremor which occurred during excitement or effort to the involuntary coarse jerking of the greater part of the body, worse on effort and even persisting at rest, but disappearing during sleep. Since emotivity is largely an accompaniment of these disorders, rest, strict isolation and continued suggestion must be employed to a great extent in the treatment. I have always considered stammering merely a form of functional tremor, for here also emotivity plays a leading rôle in its production, much more so than in the functional paralyses without tremor. In most cases the coarse tremor can be removed in a short time; but it is always necessary to study the patient psychologically for a shorter or longer period before treatment. The use of suggestion alone is very potent as a cure, but it is greatly enhanced by explaining to the patient in a terse, simple way, the rationale of the disability. As a prophylactic against relapses, physical exercises are indulged in for several successive weeks.

The tics are the most difficult of all the hysterical disorders to treat, as suggestion or even faradism rarely succeed rapidly in abolishing the disorder. In these cases, isolation, forced feeding and oft repeated corrective exercises before a mirror, together with strong suggestion, help naturally to cure this aggravating symptom. As the emotion subsides, the tic diminishes.

Sometimes, as in the following cases, one of double platysma spasm, the patient was cured after a very brief treatment.

Case 12.—Private C., aged 44, who had double platysma spasm four months, was cured in three hours of continuous treatment. He was buried in a dugout and was being extricated when another shell burst nearby. This unnerved him, and he began to shake all over. He was carried to a shell hole and remained there for several hours until the barrage cleared. He was shaking so badly that he could not walk without the aid of two men. On the way to the hospital that day, he was knocked unconscious again, and when he regained his senses his head began to twitch and had continued to do so since. The patient was depressed, and had terrifying dreams, continual headache and difficulty in getting to sleep. When he did get to sleep it was fitful. The feet and hands were cold and clammy, the pupils were dilated, the reflexes increased. There was a continual jerking of the chin and neck in a forward movement, about forty times a minute. Slamming of a door or sudden noise sent the patient into a long continued spasm with contortion of the face and mouth. After several days of complete isolation, during which he was given strong suggestion and many reassurances as to his imminent cure, he was finally treated with a mild faradic current and cured after three hours of treatment.

RULES OF TREATMENT

Having thus detailed the treatment, I have been led, through my experience, to lay down the following general rules for the efficient, rapid, and complete cure of hysterical symptoms:

1. Study each case fully. Take a complete family and personal history, especially for previous nervousness or similar attacks, even though the character of the affection appears evident.
2. Study each case psychologically, before instituting treatment. This can take the form of a psychanalysis in the cases in which emotivity plays a prominent part. Encourage

the patient to talk of himself and thus gage his mental condition.

3. Produce an atmosphere of cure in the wards or office. This is best accomplished by contact with cured patients. A confident, optimistic atmosphere has helped to cure more hysterical symptoms than all the mechanical appliances.

4. The patient must seek the cure.

5. When the patient resists the cure, this must be broken down by strong persuasion, long continued, or by faradism.

6. The physician must, at all times, be master of the situation. He must have a ready response to all questions put to him by the patient.

7. Do not discontinue the treatment until the cure is accomplished.

8. Let the patient into your confidence, and explain to him in simple terms how his symptom is caused and how you propose to cure it immediately.

9. Be absolutely sure of your diagnosis before beginning treatment.

10. A quiet, firm sympathy, together with an air of supreme confidence, is essential for the "air of recovery" in the treatment room.

11. Hysteria is often promoted in the ward by mental contagion. If a severely affected patient is admitted it is best to isolate him for a short while and thus prevent this contagion.

12. The earlier the treatment is instituted after the occurrence of the symptom, the easier and more complete the cure. The fixation of the idea is thus prevented.

13. During the treatment of a paralyzed member, watch for the slightest voluntary movement of the limb on the part of the patient and use that for the point for further suggestion.

14. The method of treatment varies with the mentality of the patient, the desire for recovery, the degree of education and his social level.

(*a*) To the cultivated and intelligent, frankness should be the keynote. Suggestion often suffices for the cure.

(*b*) To the uneducated, simple suggestion plus a material method is usually necessary.

15. To avoid the distraction of the patient during treatment, all extraneous noises and movement should be eliminated.

16. The physician must possess a strong will power. He cannot convince unless he himself is convinced. He must display kindness, but his commands must be full of authority.

17. Results of treatment depend on the physician who plays the leading part. The patients are cured when they find their master.

18. Do not lose your temper. Have patience.

19. Select the best time for treatment, and if not successful after a time, cease, and recommence at a more favorable opportunity, explaining to the patient that rest is the cause for stopping. Meanwhile he should be completely isolated.

20. Do not give fresh suggestion to the patient or threaten him unless he is known to be a malingerer.

21. The ease of curability is largely dependent on the duration of the symptoms and the nature and number of previous treatments.

22. Contractures are more persistent than paralyses.

23. Strict military discipline and regular outdoor work are the necessary after-cure of these patients.

24. Make the disease an unprofitable one for the patient.

25. The cure of a hysterical symptom is a mental combat between the physician and the patient, in which the victory is on the side of the physician. This is the secret of psychotherapy.

26. The patient should be observed for a few weeks after the cure.

27. The most potent causes of failure to cure are ill will of the patient, unfavorable surroundings, and mistakes in diagnosis.

With these considerations as working hypotheses, any physician should be able to treat hysterical disorders successfully; but without them, failure stares him in the face.

American Red Cross Military Hospital No. 4.

THE SURGICAL TREATMENT OF EMPYEMA BY A CLOSED METHOD *

ARVINE E. MOZINGO, B.S., M.D. (Tipton, Ind.)
Captain, M. C., U. S. Army
WASHINGTON, D. C.

The death rate from many hundred cases of empyema occurring in the United States Army during the winter of 1917-1918 was very high. The average mortality reported from the various camps was 30.2 per cent. Many camps reported between 45 and 60 per cent., and one camp reported a mortality of 84 per cent. in eighty-five cases.[1] Most of the deaths reported followed virulent *Streptococcus hemolyticus* infection. Whether or not this high death rate was due to the virulence of the infection or the treatment, it is evident that there are great possibilities for improvement in methods of treatment.

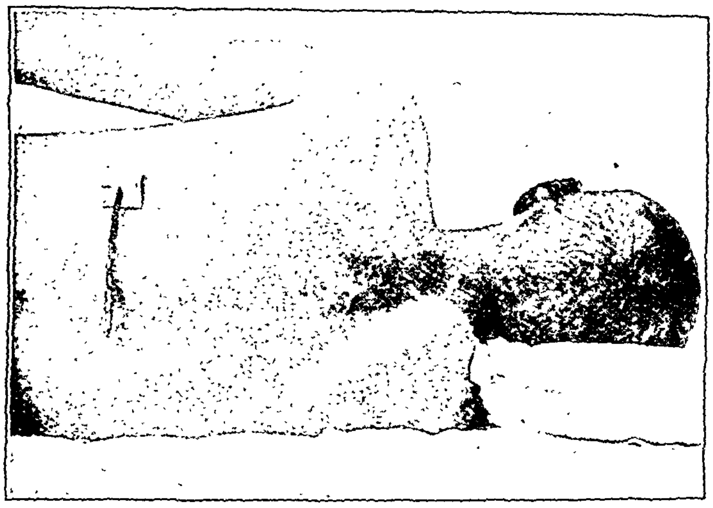

Fig. 1.—Tube inserted and fastened in place.

During the past seven months I have had the opportunity to observe seventy cases of empyema in the Walter Reed General Hospital, Washington, D. C., and as a result of this experience have adopted a method of treatment that is submitted as an improvement on the usual procedures. The chief features of this method are:

1. A single, early, minor operation without danger of shock or collapse of the lung.
2. Intermittent removal of secretion and antiseptic treatment given through a small rubber tube, with a bulb syringe.
3. Rapid partial sterilization with neutral solution of chlorinated soda (Dakin solution) followed by complete sterilization with a 2 per cent. dilution of liquor formaldehydi in glycerin.
4. Maintenance of negative pressure in the empyemic cavity, tending to early obliteration of the cavity.
5. One dressing which will last several days and no skin irritation.
6. Emphasis on simple physical principles rather than on major operative surgery.

DETAILS OF METHOD

If fluid in the pleural cavity is suspected, a diagnostic puncture should be made at once. If a smear from the fluid is negative, and the patient's condition permits, it is best to wait for a culture report. Care must be taken not to operate on a sterile cavity; but if pyogenic micro-organisms are present, operation should be done immediately.

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* Read before the staff of Walter Reed General Hospital, Oct. 16, 1918.

[1] Cases of Empyema at Camp Lee, Va., Preliminary Report, by the Empyema Commission, The Journal A. M. A., Aug. 3, 1918, p. 366; Review of War Surgery and Medicine, August, 1918.

The location of the empyemic cavity is determined by physical examination, diagnostic puncture, and by roentgen ray when this is available. The place of election for operation is at the most dependent part of the cavity when the patient is either erect or recumbent.

If fluid is present in the ninth interspace, postaxillary line, this point is most desirable. The exact site of operation in this method is, however, not as important as in the usual thoracotomy procedures. The main point is to enter the cavity, preferably as low as possible. When operation is determined on, the field is sterilized and enough 0.5 per cent. procain injected intradermally to make a well blanched wheal the size of a dime and about 4 c.c. just between the ribs. With a knife, 6 mm. wide, a stab is made through the skin and then with a 7 mm. trocar and cannula the thoracic wall is punctured midway between the ribs so as to avoid the intercostal vessels and nerve.

The trocar is withdrawn and a finger immediately placed over the end of the cannula to prevent pus from escaping or air from entering. The finger is removed and a rubber tube instantly inserted through the cannula into the chest cavity. The tube, when introduced, should fit closely into the cannula and be held closed so that no air can enter, and should be long enough to extend from 2 to 6 inches outside of the cavity.

The cannula is now withdrawn and slipped off the tube, leaving the latter firmly held, air tight, in the chest by the contracting wall of the wound.

While the use of a trocar and cannula is to be preferred, it is not essential; and in case no trocar and cannula are at hand, a small stab wound should be made and the rubber tube carried into the pleural cavity by use of a curved hemostat.

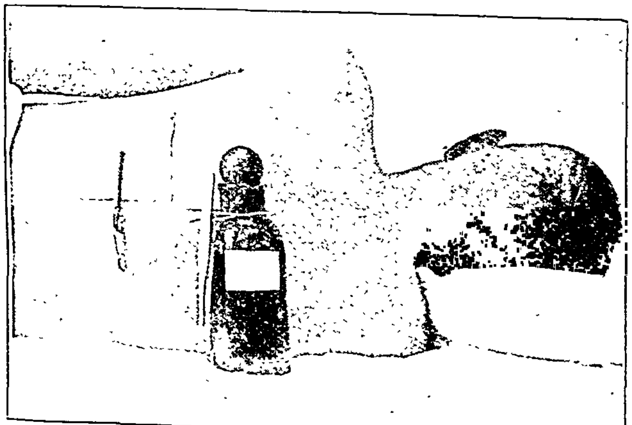

Fig. 2.—Finished dressing, bottle of Dakin's solution, and tissue forceps.

The length of the tube in the cavity depends on the shape and size of the cavity. If the cavity is small, the tube need be inserted barely through the thoracic wall. In large or irregular cavities, the tube can reach from 2 to 8 inches within, and should occasionally have a 2 mm. fenestra in the side at a point just inside the chest wall, in order more easily to make possible the aspiration of all fluid from the cavity.

The dressing is small and does not hinder free expansion of the chest. The tube once inserted is thus fastened in place: A 1-inch safety pin is thrust through the edge of the tube, so as not to obstruct the lumen. Between this and the skin is placed a thin pad of gauze, 1 inch square, split to the center (Fig. 1).

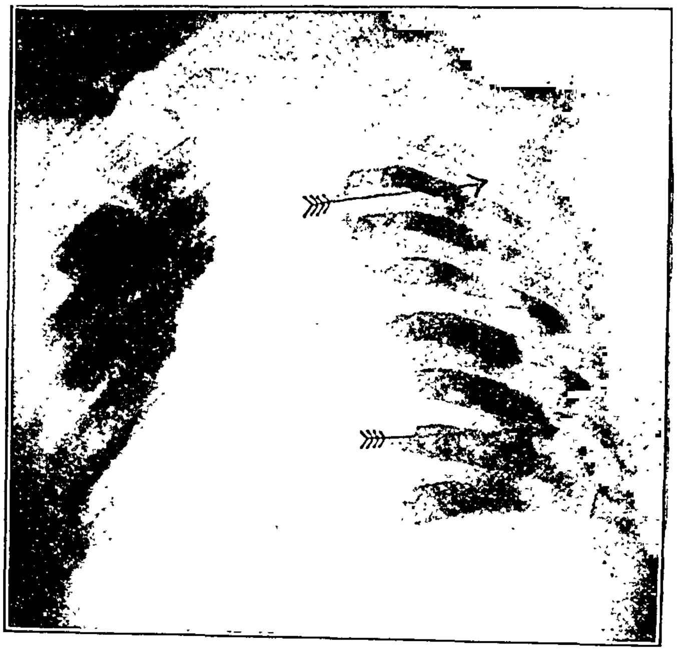

Fig. 3.—Empyemic cavity, containing air, outlined by heavy wall indicated by arrow, and with tube entering lower part.

On top of the pin is a similar pad with a split turned the opposite way. Over all is placed a pad 2 inches square, of ten layers of fine meshed gauze, in the center of which a hole to admit the tube snugly has been made with a rounded and pointed instrument and never by cutting. This pad is held by four strips of adhesive plaster, each 1½ inches wide and 3½ inches long, making the finished dressing a 3½-inch square (Fig. 2). This dressing will last several days, as no discharge escapes around the tube.

By means of a half-ounce bulb urethral syringe, all the pus is aspirated from the cavity through the tube, and reversely; the cavity is washed out with Dakin's solution. No air is allowed to enter the tube or, through it, the pleural cavity. To prevent entrance of air and contamination, the tube is kept closed at the tip end by a spring clip between treatments.

Each patient should have his individual syringe and Dakin's solution in a wide mouth bottle to which is attached a wire to hold the tissue forceps. During aspiration and washing out, forceps and not the fingers should be used to compress and close the tube each time the syringe is removed for emptying or filling it, to eliminate possible contamination.

In giving treatment, the tube is first compressed with the forceps, the clamp removed, the nozzle of the syringe inserted with the bulb compressed, and the secretions that have accumulated since the last treatment are aspirated. One has to make sure that the negative pressure is maintained by not allowing air to enter through the tube. When, by this means, all the secretions have been aspirated, the method is reversed and from 20 to 60 c.c. or more of Dakin's solution are injected, not instilled, into the cavity. For aid in cleansing, the solution is agitated in the cavity by quick compressions and expansions of the bulb. Aspiration is performed again and this process is repeated until the fluid comes away clear. Then the cavity is refilled to about one-half the original capacity, and the clamp is applied and left for from five to thirty minutes, during which *time the patient* should change his *position* frequently to make the contained mixture homogenous and bring the solution in contact with all the infected pleural surfaces.

The frequency of aspirations and injections depends on the general condition of the patient. Beginning *with the* operation, treatments are *given* every two hours by day and every three hours by night, until all the pyogenic membrane and fibrous exudate have been dissolved, a process which usually takes from one to four days, depending on the kind of infection, and which may be determined by the amount and color of the sediment. In *Streptococcus hemolyticus* infection, the membrane and fibrous deposits will require a longer time to dissolve than is usual with other infections.

If the pneumonic process in the lung is still active, the treatments should not be given *oftener* than every six to eight hours until the pneumonia subsides, as more frequent treatments will cause a reaction indicated by an increased rise of temperature and pulse rate. As soon as the pneumonia has subsided, the patient should be *allowed* out of bed, and as strength increases should be given deep breathing and light setting up exercises. With this method, it is not necessary to keep patients in bed in cases of uncomplicated empyema, or have them use Woulfe bottles.

While Dakin's solution, because of its free chlorin and alkalinity, is one of the greatest solvent bactericides in general use, its action is brief. In a series of cavities cleansed in the manner described above, and with 150 c.c. of Dakin's solution, testing 0.49 per cent. of free chlorin when first injected and kept agitated with a syringe, of which solution 10 c.c. were then withdrawn every minute for five minutes, the average test of the fluids withdrawn gave successive strengths of 0.38, 0.28, 0.19, 0.11 and 0.07 per cent. This *shows the solution* to be practically inert as a bactericide and solvent after five minutes. Early withdrawals of the solution allow longer periods of negative pressure and opportunity for expansion of the lung. If pressure symptoms are too marked in a given case, at the expiration of five minutes the solution should be withdrawn, and the amounts injected should be decreased.

When the Dakin solution comes in contact with the cavity exudate, chloramins form which also have bactericidal properties (lasting thirty minutes to one hour—Dakin), and for this reason the solution is usually left in for several minutes.

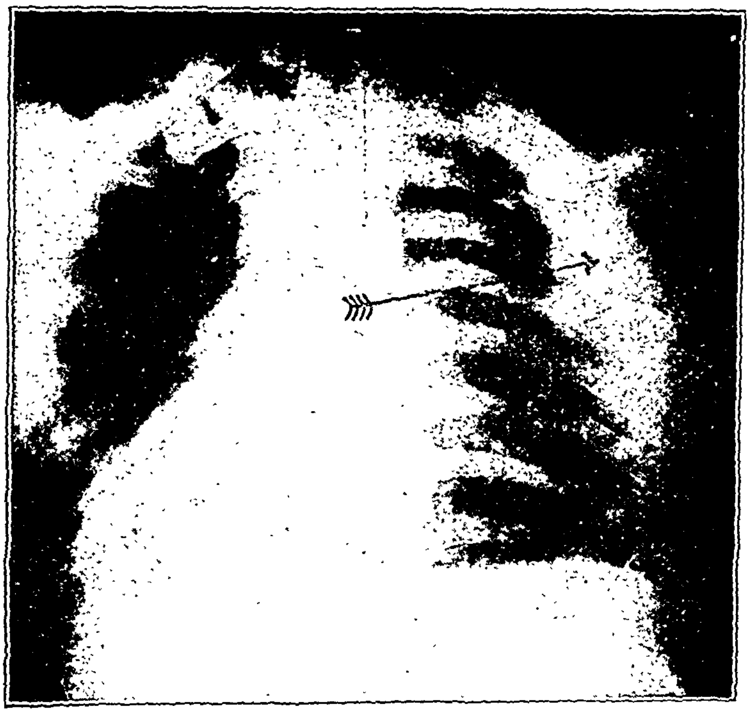

Fig. 4.—Same cavity obliterated by suction with bulb syringe (negative pressure); thickened visceral pleura indicated by arrow now pressed against thoracic wall and all air removed.

The original tube is *not usually removed* until the cavity is *obliterated by adhesions.* The dressing will *ordinarily last until the tube is ready* to be removed; and, as there is *no cumbersome* apparatus of bottles and tubing to manipulate, the attending surgeon needs only one nurse as *an assistant* in giving treatments.

The surgeon himself *should* give at least one treatment daily, and *take cultures and smears.* The other treatments may be given by a properly instructed nurse.

The cavity *should* be *filled* once daily to three-fourths its original capacity, to prevent the walling off at the border of the cavity of small pockets before the cavity is sterile; for, if such pockets are formed, convalescence is *prolonged and* secondary operations may be necessary.

The secretions in the cavity should be *agitated vigorously* by quick compression of the bulb so as to make a more homogeneous *emulsion before taking the culture* and smear. The assistant will handle the sterile test tubes and make the smears while the surgeon gives the treatment. It is important to note that the amount of negative pressure *obtained by the suction of the half-ounce* bulb syringe is considerable, as such a syringe will lift water to a height of 7 feet in a 6 mm. tube. Also roentgenograms taken just after such negative (suction) pressure has been made show large pleural cavities, even those of old standing, to be almost obliterated (Figs. 3 and 4). If at any time air is allowed to enter and cause the lung to collapse, full expansion is reestablished by this process. That the negative pressure is maintained within the chest wall after many hours is shown by the fact that when the tube fastened into the pleural cavity by this technic is connected with a tube leading from a bottle of Dakin's solution and clamp on the chest removed, the solution will be drawn into and fill the cavity.

After from one to seven days' treatment with Dakin's solution, given as described above, the pyogenic membrane will have been dissolved and the cavity made fairly sterile. The smears will show, on the average, one bacterium to ten fields, or may be entirely negative, and the cultures will *show a gradual diminution* in the number of colonies, though they *may* still be innumerable. Continuance of the Dakin *solution* would, in time, probably sterilize the cavity *completely*; but instead of continuing the Dakin *solution at this* stage, one should change to and inject a 2 per cent. dilution of liquor formaldehydi in glycerin, once or twice daily, for these reasons:

1. Cultures become sterile in from one to ten days, generally the second or third day.

2. As the solution of formaldehyd is a much stronger bactericide than the Dakin solution, there is less danger of pus pockets forming.

It is to be noted that with the use of Dakin's solution smears may be negative when cultures are positive. With formaldehyd solution the reverse is true; cultures are negative but smears may be positive. In other words, bacteria present under Dakin's solution treatment, while few in number, are viable; under formaldehyd treatment, they may be more numerous but are nonviable.

The formaldehyd solution is injected in amounts of from 3 to 40 c.c. daily and left in the cavity from twelve to twenty-four hours. Before each injection with formaldehyd solution the cavity is given one of the usual Dakin treatments. At first, the formaldehyd injection usually is followed in about four hours by a rise of temperature of from 1 to 3 degrees, a slight burning sensation in the cavity and, occasionally, pain in the shoulder and neck of the affected side and, at times, in the epigastrium. For this reason, it is not advisable to use the formaldehyd solution in acute cases until the usual course of treatment with Dakin's solution is given and the pneumonia, if present, has subsided.

The first injection in large cavities should not be more than 10 c.c. In twenty-four hours the cavity will usually contain from 20 to 120 c.c. of brownish fluid. This should be aspirated and the cavity filled two-thirds the original capacity with Dakin's solution left in for several minutes, aspirated, and the formaldehyd solution again injected. If the cavity is large, and the reaction not severe, 40 c.c. may be used. In two or three days, the fluid will become serosanguineous, and usually no colonies grow on cultures made on blood-agar plates. After the cultures are negative for three successive days, the amount of formaldehyd solution instilled daily should be reduced to from 3 to 10 c.c. and the maximum negative pressure maintained until the cavity has been reduced to a content of 50 c.c. or less.

The size of the cavity can be determined by injecting Dakin's solution and noting the resistance offered when pressing the bulb and the force of expulsion of the solution when the syringe is removed and the tube left open. Care must be taken not to break up new adhesions.

Under the treatment described above, adhesions soon form because of the thorough cleansing, irritation and rapid partial sterilization by the Dakin solution, followed by the complete sterilization by the formaldehyd solution, and the close contact of the parietal and visceral pleuras due to the long, constant negative pressure.

REPORT OF CASES

The following cases of the thirty-two treated by the closed method are reported as fairly typical:

CASE 1.—*Streptococcus hemolyticus infection, complicated by a bronchial communication. Attempt for two months to cure by repeated aspirations, but sterilization in six days by the closed method, with the use of Dakin's solution alone.*

A private, aged 29, admitted to Walter Reed General Hospital, May 20, from a base hospital, was diagnosed, April 4, as having lobar pneumonia, Type III.

May 21, the patient weighed 96 pounds, was anemic and nervous, had insomnia and anorexia, and could not lie down. He raised 250 c.c. of thick sputum daily. Roentgenoscopy revealed density in the left chest, lower lobe.

May 23, pleuracentesis at the fifth interspace, postaxillary line, yielded 300 c.c. of thick pus. Smear showed streptococcus; culture showed pure *Streptococcus hemolyticus.*

June 5, 350 c.c. of pus were aspirated at the seventh interspace, postaxillary line.

June 14, there was slight improvement; the cough was less.

June 20, the patient was coughing much at night and morning, was extremely nervous, and cried at times, saying he did not know why. Repeated sputum examination was negative for tubercle bacilli.

July 12, 150 c.c. of green pus were aspirated at the ninth interspace postaxillary line.

July 14, there had been no cough for the last two days, except when the patient lay down. He slept propped up in bed.

July 16, he weighed 102. The closed method of treatment was instituted; a stab puncture was made at the ninth interspace, postaxillary line, and 350 c.c. of greenish pus were aspirated through a small rubber tube. Culture showed pure *Streptococcus hemolyticus.* A communication of the cavity with a bronchus made impossible a negative pressure and prevented the injection of more than 175 c.c. of Dakin's solution, which amount was used as regular treatment.

July 23, the patient had walked about the ward and outside at will since the operation. He weighed 108 pounds. There was no cough, the patient was ravenous, he slept soundly, and lay in any position.

July 26, Dakin's solution was stopped. Smears and cultures had been negative for three days.

August 6, the tube was still in place. Smears and cultures had been negative, daily, for the past nineteen days. Communication was open. The injection of 10 c.c. of formaldehyd solution, daily, was begun.

August 10, the patient weighed 122 pounds. Communication was closed, and negative pressure maintained.

August 20, the tube was removed. No suture was made.

September 20, the wound had now been closed one month. The patient weighed 136 pounds, a gain of 34 pounds, and felt normal.

CASE 2.—A private, aged 24, admitted from a base hospital to Walter Reed General Hospital, July 19, was diagnosed as having lobar pneumonia, July 3. A diagnostic puncture yielded thick, greenish pus. Smear showed five bacteria to the field, and the Type II pneumococcus was later determined.

July 19, the closed method treatment was instituted. A trocar-cannula puncture was made, a tube introduced through the cannula, and 350 c.c. of pus removed. The usual Dakin treatments were given, and on the second day when 150 c.c. of Dakin's solution were injected, the patient showed bronchial communication. The amount was reduced to 125 c.c. each treatment, and on the fourth day, smear showed one bacterium to five fields. Cultures were taken daily, though the number of colonies gradually decreased; July 29, they were still innumerable. The formaldehyd solution was then used, and in two days cultures were negative and smear showed one bacterium to five fields.

July 31, the treatment could have been safely stopped, but was continued to reduce the size of the cavity and to determine also if the smears could not be made negative.

August 18, the smears were positive and culture was negative. The tube was removed.

September 20, the wound had been closed one month. The patient gained 24 pounds and was on furlough.

CASE 3.—A private, aged 23, admitted, August 28, to Walter Reed General Hospital from a base hospital, had been diagnosed, July 23, as having left lobar pneumonia. He weighed 130 pounds. The temperature was 99.8, pulse 100, and respiration 32. He had had little sleep the past week.

August 29, roentgenoscopy revealed an encapsulated empyema extending from the fourth to the tenth rib, posteriorly, on the left side. The closed method of treatment was instituted.

Following a diagnostic puncture, a trocar-cannula puncture was made, and 575 c.c. of thick green pus, containing three bacteria per field, were removed through a small rubber tube. The patient was treated with Dakin's solution for two days, and formaldehyd solution one day, and then the smear showed one bacterium in ten fields and culture was negative. Daily injection of 3 c.c. of formaldehyd solution was given and negative pressure maintained for five days longer, when the tube was removed.

October 3, the wound had been closed twenty-eight days. The patient returned from furlough, weighing 164 pounds. There was full expansion of the chest. The physical and roentgenographic findings were negative. There was a scar as if made by a small bullet.

CASES TREATED BY THE CLOSED METHOD

	Number
Cases treated by the closed method exclusively	11
Treated first by open thoracotomy, followed by the closed method	21
Total	32
Recovered and returned to duty	10
Convalescent and out of hospital on furlough	16
Still under treatment*	6
Died	0
Discharged for disability	0
Total	32

* *Three of the six cases still* under treatment are of but one week's duration and the patients are doing well. The other three are left overs from open thoracotomy treatment and are *now* being treated by the closed *method, superimposed on long antecedent open treatment.*

None of the patients have died, but it is recognized that this fortunate outcome cannot obtain in a larger series of cases.

That twenty-six of the thirty-two patients, 81+ per cent., have entirely recovered without secondary operation or crippling complications is submitted as justification for further trial of the method advocated.

In seven cases treated here, repeated needle aspirations were used. One patient was apparently cured and returned to duty; four patients, who had small cavities, are still under observation, slowly improving after long periods of convalescence. Two, having become gradually worse after repeated aspirations, were treated by the closed method and cured in a short time. Had the other five been treated by the writer's method, it is believed that cure would have been affected in less than one-fifth the time.

Twenty of the thirty-one cases were of long standing. These cases had received the usual large thoracotomy incision with resulting chronic sinuses and cavities varying in size from 60 to 700 c.c. capacity. With fifteen other cases, they had been treated with dichloramin-T, 5 per cent., in chlorcosane, in amounts of from 5 to 75 c.c. daily for six weeks, with very poor results. The empyemic cavities of this series of eighteen cases remained positive for organisms even under the most intensive treatment with Dakin's solution, but became sterile in from one to ten days with the combination treatment of Dakin's solution and formaldehyd solution by the closed method. In these cases, after failure to cure by treatment through the thoracotomy openings, the large drainage tubes were replaced by smaller ones sealed into the cavity, after which the cases were treated as if they were originally closed method cases. The small cavities were given two treatments daily with the Dakin solution, followed by the formaldehyd solution. In two of these cases, while the large wounds were closing, it was necessary to use a rubber dam about 3 inches square, fastened with a double layer of adhesive plaster in order to establish and maintain negative pressure. Five hundred c.c. of Dakin's solution were injected into the large pleural cavities at 9 a. m., 3 p. m. and 6 p. m., and left in for about forty-five minutes. Following the last treatment, 40 c.c. of the formaldehyd solution were injected and left in over night.

While, in treating empyema cases, roentgen-ray and bacteriologic facilities are to be preferred, they are not absolutely essential when the closed method is used. After treatment from one to six days with Dakin's solution, followed by a few days' treatment with the formaldehyd solution, if the secretion has become a clear, serosanguineous fluid, one can feel fairly assured that the cavity is surgically sterile, even though no smears or cultures are made.

COMPLICATIONS

In ten cases in the series treated, a communication existed between the empyemic cavity and a bronchus. We think this complication exists more often than is generally believed. These communications caused but little interference in giving treatment with Dakin's solution. The patient can detect when the solution enters a bronchus, and thereafter the injection was always stopped just before the solution reached an amount that would enter the bronchus. The formaldehyd solution, which was used in six of these cases, seemed to hasten the closure of this opening.

One patient developed spontaneous pneumothorax:

Case 4.—A private, aged 31, was first treated for five weeks by repeated needle aspirations. He became gradually worse, and a small stab wound was made and 800 c.c. of *Streptococcus hemolyticus* pus were aspirated through a rubber tube and the case thereafter treated by the closed method. Rapid recovery ensued. The patient gained 37 pounds in forty-eight days. *After the wound had been closed for three weeks,* without any warning, one night while the patient was in bed, *he developed a spontaneous pneumothorax. This could not* be satisfactorily explained, though it was thought probably due to rupture of a small peripheral abscess of the lung. The patient had a chill and cold sweat. The temperature was 105, pulse 150, and respiration 40. The anterior left chest up to the fourth rib, where no aspiration punctures had been made, was highly tympanitic, and the posterior side was very dull, owing to the compressed lung. *The patient lost 16* pounds in the week following, but regained this in ten days.

COMPARISON WITH OTHER METHODS

The closed method is to be compared with treatment by repeated aspirations and the open methods of thoracotomy, either intercostal, or by resection of a short length of one or two ribs.

The repeated aspiration method always means more or less pain and a long period of convalescence. While pressure symptoms may be relieved through evacuation of the pus, the cavity is seldom completely emptied, and the absorption of toxins continues.

Murphy was first, many years ago, to use a 2 per cent. dilution of liquor formaldehydi in glycerin in the pleural cavity, and modified the treatment by simple aspiration, as follows: He withdrew the pus through a needle, immediately injected the formaldehyd solution, and allowed it to remain for from one to four weeks. This process was repeated usually three or four times until the pus in the cavity became sterile and converted into a serosanguineous fluid. This, he asserted, would be absorbed in from three to twenty months, and the cavity obliterated.

The open method, whether by rib resection or intercostal thoracotomy, is always accompanied by much pain and discomfort. The profuse discharge necessitates a large and expensive dressing which requires changing from two to six times daily. When Dakin's solution is used to irrigate the cavity, large amounts of petrolatum gauze must necessarily be used to protect the skin from irritation. The open wound not only invites contamination but also allows the lung to collapse and not uncommonly causes death from shock. For this reason, some users of the open method advocate delayed operation with repeated needle aspirations to relieve pressure symptoms, and permit adhesions to form to prevent the lung from collapse when the cavity is opened. With the closed method, the aspirations and delay are not necessary.

Deaths from hemorrhage soon after thoracotomy operations have been reported, and no doubt this accident occurs more often than is reported or suspected. In prolonged drainage cases, a large drainage tube may wear through the periosteum and cause an erosion of the rib, producing pain or causing fatal hemorrhage from one of the intercostal vessels.

In thoracotomy cases, the resulting scar is large and unsightly. It is frequently adherent to the ribs, and if so, is always more or less painful.

In closed method cases, the scar is so small as to be almost imperceptible, and is freely movable as no adhesions exist between it and the underlying tissues.

When the open method is used, with resulting complete or partial collapse of a lung, and there exists a severe bronchial or pneumonic involvement of the opposite lung, the patient's respiratory area is so diminished that chances of recovery are extremely poor, whereas, by using the closed method, as there is no collapse of the lung, the chances of recovery are very good.

Though we have as yet treated no cases of double empyema by the closed method, there is every reason to believe that in double empyema the pleurae of both lungs can be treated at the same time, which is an impossibility with the open method, and with even a better chance of recovery than with the open method when but one pleura is involved

When the Carrel treatment is instituted through a large thoracotomy incision, and several Carrel tubes are inserted, there is more or less uncertainty as to their position. Those which go to the upper part of the cavity permit only a momentary flush of Dakin's solution at each treatment, and the reflux at once pours out through the incision, giving the solution opportunity to give up only a small part of its available chlorin. On the other hand, in the dependent part of the cavity, a "puddle" is formed which acts as a mechanical barrier, preventing the newly "instilled" Dakin's solution from reaching the infected pleura, and also acts as a diluent, thus in both ways defeating the very principle on which the antiseptic action of Dakin's solution is based, namely, that the solution must not be below 0.40 per cent. in available chlorin, to be an efficient bactericide.

In cases of multilocular cavities, walled off by firm adhesions and not connected by lacunae, the open operation is advised so as to break up the adhesions. The incision should then be sutured to fit a small tube and the cavity treated by the closed method.

It is possible that an open operation may be necessary in some cases of long standing when the lung is somewhat fixed in compression or bound down by firm adhesions; but even in these cases we are not sure but that persistent negative pressure by the closed method will, in time, overcome the trouble.

We believe, if the closed method of treating empyema in acute cases is carried out properly, that there will rarely be any necessity for the Schede, Eastlander or Delorme operations.

Recent experience in five cases has shown that sodium hypochlorite solution with an increased alkalinity and three times the amount of available chlorin which is in Dakin's solution can be used in empyemic cavities by the closed method, with perfect safety.

With such a wide margin in the strength of the hypochlorite solution that can be used in empyemic cavities, it is practicable for those who do not have the usual facilities for making Dakin's solution to purchase a concentrated hypochlorite solution and dilute to the proper strength before using. Liquor sodae chlorinatae (Labarraque's solution), which is an official U. S. P. product, containing 2.5 per cent. of available chlorin, is preferable. This solution is easily available and can be used in a dilution of one part to from three to five parts of distilled water.

While a hypochlorite solution is to be preferred, we believe that sterile physiologic sodium chlorid solution, weak iodin or potassium permanganate solutions would be very efficient in the few days' preliminary treatment of the empyemic cavity by the closed method *before* using the formaldehyd solution, but as yet have had no experience with any solutions other than the hypochlorite.

CONCLUSIONS

1. Early operation by the closed treatment method has the following advantages:

(*a*) It can be done without shock to the patient or collapse of the lung.

(*b*) It provides perfect evacuation and cleansing of the empyemic cavity.

(*c*) It prevents absorption of toxins.

(*d*) It prevents the lung, compressed by the exudate, from becoming fixed in compression.

2. Sterilization is more rapid by the closed than by the usual methods, as the antiseptics are held in contact with the infected surfaces until they have exerted their full bactericidal action.

3. Dakin's solution followed by a 2 per cent dilution of liquor formladehydi in glycerin is the most ideal antiseptic method of treating empyema.

4. Communication of an empyemic cavity with a bronchus is more common than is generally suspected. It is not a contraindication to the use of Dakin's solution and formaldehyd solution, and more readily closes when these are used.

5. Constant negative pressure gives the maximum expansion of the lung, and the irritating and cleansing action of sodium hypochlorite solution causes rapid obliteration of the cavity.

6. In uncomplicated cases of empyema, the patient need not be kept in bed.

7. Test smears are negative when cultures are positive when Dakin's solution is used and vice versa when formaldehyd-glycerin is employed.

8. Roentgenographic and bacteriologic laboratory facilities, while always to be preferred, are not absolutely essential in treating empyema by the closed method.

9. The closed method is productive of great economy of time, labor and dressing material.

10. Treatment by the closed method can effect cures in many cases similar to those that are usually treated by the Schede, Eastlander or Delorme operation.

11. The closed method is practicable in the home and in country practice.

12. A hypochlorite solution of increased strength over Dakin's solution in both alkalinity and amount of available chlorin can be used in empyemic cavities with safety.

13. Labarraque's solution, diluted to the strength indicated, can be substituted for Dakin's solution.

14. The closed method offers good chances of effecting cures in cases of double empyema, through the possibility of treating the empyemic cavities on both sides at the same time, which treatment is impossible by the open method.

Walter Reed General Hospital.

INFLUENZA

REPORT OF A SPECIAL COMMITTEE OF THE AMERICAN PUBLIC HEALTH ASSOCIATION

[Note.—*To afford such aid as may be possible to administrative health officials, a committee of the American Public Health Association, consisting of Drs. W. A. Evans, Chicago, chairman; D. B. Armstrong, Framingham, Mass.; William H. Davis, Washington, D. C.; Mr. E. W. Kopf, New York, and Dr. William C. Woodward, Boston, was charged with the duty of preparing a provisional working formula, based on the facts and opinions presented at the meeting of the association in Chicago, Dec. 9 to 12, 1918. Because of the timely and important character of the subject, the report is published in full.*—Ed.]

NATURE OF THE EPIDEMIC

The present epidemic is the result of a disease of extreme communicability. So far as information available to the committee shows, the disease is limited to human beings.

The micro-organism or virus primarily responsible for this disease has not yet been identified. There is, however, no reason whatsoever for doubting that such an agency is responsible for it. Mental conditions may cause a person to believe he has influenza when he has not, and may make the patient who has the disease suffer more severely than he otherwise would. No mental state alone, however, will cause the disease in one who is not infected by the organism or virus that underlies the malady.

While the prevailing disease is generally known as influenza, and while it will be so referred to in this statement, it has not yet been satisfactorily established that it is the identical disease heretofore known by that name, nor has it been definitely established that all preceding outbreaks of disease styled at the time "influenza" have been outbreaks of one and the same malady.

There is no known laboratory method by which an attack of influenza can be differentiated from an ordinary cold or bronchitis or other inflammation of the mucous membranes of the nose, pharynx or throat.

There is no known laboratory method by which it can be determined when a person who has suffered from influenza ceases to be capable of transmitting the disease to others.

Laboratories are necessary agencies for the supervision and ultimate control of the disease. The research laboratory is necessary for the discovery of the causative micro-organism or virus, and for the discovery of some practicable method for the propagation of a specific vaccine and a curative serum. Clinical laboratories are necessary for the supervision and control of such vaccines and serums as may be used from time to time for the prevention of the disease and for therapeutic purposes, and for the information such laboratories can give to health officers and physicians as to such variations in the types of infective micro-organisms as occur during the progress of an epidemic.

Deaths resulting from influenza are commonly due to pneumonias resulting from an invasion of the lungs by one or more forms of streptococci, or by one or more forms of pneumococci, or by the so-called influenza bacillus, or bacillus of Pfeiffer. This invasion is apparently secondary to the initial attack.

Evidence seems conclusive that the infective micro-organism or virus of influenza is given off from the nose and mouth of infected persons. It seems equally conclusive that it is taken in through the mouth or nose of the person who contracts the disease, and in no other way, except as a bare possibility through the eyes, by way of the conjunctivae or tear ducts.

PREVENTION

If it be admitted that influenza is spread solely through discharges from the noses and throats of infected persons finding their way into the noses and throats of other persons susceptible to the disease, then no matter what the causative organism or virus may ultimately be determined to be, preventive action logically follows the principles named below and, therefore, it is not necessary to wait for the discovery of the specific micro-organism or virus before taking such action.

I. Break the channels of communication by which the infective agent passes from one person to another.

II. Render persons exposed to infection immune, or at least more resistant, by the use of vaccines.

III. Increase the natural resistance of persons exposed to the disease, by augmented healthfulness.

I. *Breaking the Channel of Communication.*—

(*a*) By preventing droplet infection. The evidence offered indicates that this is of prime importance.

(*b*) By sputum control. The evidence offered indicates that the danger here is due chiefly to contamination of the hands and common eating and drinking utensils.

(*c*) By supervision of food and drink. Evidence offered does not indicate much danger of infection through these channels.

Details and practical methods possible for the limitation of infection through droplets, sputum, and food and drink are discussed later under special preventive methods.

II. *Immunization and Vaccines.*—(These are discussed in a report of the laboratory committee farther on.) In the present epidemic vaccines have been used to accomplish:

1. The prevention or mitigation of influenza per se.
2. The prevention or mitigation of complications recognized as due to the influenza bacillus or to various strains of streptococci and pneumococci.

In relation to the use of vaccines for the prevention of influenza, the evidence that has come to the attention of the committee as to the success or lack of success of the practice is contradictory and irreconcilable. In view of the fact that the causative organism is unknown, there is no scientific basis for the use of any particular vaccine against the primary disease. If used, any vaccine must be employed on the chance that it bears a relation to the unknown organism causing the disease.

The use of vaccines for the complicating infections rests on more logical grounds, and yet the committee has not sufficient evidence to indicate that they can be used with any confident assurance of success. In the use of these vaccines the patient should realize that the practice is still in a developmental stage.

The committee believes that when vaccines are used experimentally for the purpose of determining their preventive or curative value, the following conditions should be complied with:

1. The groups of vaccinated and unvaccinated persons should be the same in number.
2. The relative susceptibilities of the two groups should be equal, as measured by age and sex distribution, previous exposures to infection without development of influenza, and a previous history as to recent attacks of the disease.
3. The degree of exposure in each group should be practically the same in duration and intensity.
4. The groups should be exposed concurrently during the same stage of the epidemic curve.

III. *Increased Natural Resistance of Persons Exposed to Infection.*—Physical and nervous exhaustion should be avoided by paying due regard to rest, exercise, physical and mental labor, and hours of sleep. The evidence is conclusive, however, that youth and bodily vigor do not guarantee immunity to the disease.

The nature of the preventive measures practicable and necessary in any given community depends in a large part on the nature of the community itself, as to population characteristics, industries, and so on, and on the stage and type of the epidemic curve. For example, the measures to be adopted in a purely rural community would not be practicable or desirable in a large metropolitan area, nor would the measures desirable and feasible at the beginning or end of an epidemic be found those best adapted for the intervening period. The committee has found it impossible, therefore, to lay down any rules for the guidance of all health officials alike in preventive measures. The most it has been able to do has been to state certain general principles that in its judgment should underlie administrative measures for the prevention of influenza. The application of these principles to the needs of any particular community must be left for determination by the officers of that community who are responsible for the protection of its public health.

The preventive measures recommended by the committee are as follows:

A. Efficient organization to meet the emergency, providing for a centralized coordination and control of all resources.

B. Machinery for ascertaining all facts regarding the epidemic:

1. Compulsory reporting.
2. A lay or professional canvass for cases, etc.

C. Widespread publicity and education with respect to respiratory hygiene, covering such facts as the dangers from coughing, sneezing, spitting, and the careless disposal of nasal discharges; the advisability of keeping the fingers and foreign bodies out of the mouth and nose; the necessity of hand-washing before eating; the dangers from exchanging handkerchiefs; and the advantages of fresh air and general hygiene. Warnings should be given regarding the danger of the common cold, and possibly colds should be made reportable so as to permit the sending of follow-up literature to persons suffering from them. The public should be made acquainted with the danger of possible carriers among both the sick and the well and the resultant necessity for the exercise of unusual care on the part of everybody with respect to the dangers of mouth and nasal discharges.

D. Administrative procedures:

1. There should be laws against the use of common cups, and improperly washed glasses at soda fountains and other public drinking places, which laws should be enforced.
2. There should be proper ventilation laws, which laws should be enforced.

Since the disease is probably largely a group or crowd problem, the three following subheads are especially important:

3. *The Closing of Meeting Places.*—Since the spread of influenza is recognized as due to the transmission of mouth and nasal discharges from persons infected with influenza, some of whom may be aware of their condition but others unaware of it, to the mouths and noses of other persons, gatherings of all kinds must be looked on as potential agencies for the transmission of the disease. The limitation of gatherings with respect to size and frequency, and the regulation of the conditions under which they may be held must be regarded, therefore, as an essential administrative procedure.

Nonessential gatherings should be prohibited. Necessary gatherings should be held under such conditions as will insure the greatest possible amount of floor space to each individual present, and a maximum of fresh air, and precautions should be taken to prevent unguarded sneezing, coughing, cheering, etc.

Where the necessary activities of the population, such as the performance of daily work and the earning of a living, compel considerable crowding and contact, but little is gained by closing certain types of meeting places. If, on the other hand, the community can function without much contact between the individual members, relatively much is gained by closing or preventing assemblages.

Schools: As to the closing of schools, there are many questions to be considered.

(*a*) Theoretically, schools increase the number and degree of contacts between children. If the schools are closed, many of the contacts which the children will make are likely to be outdoors. Whether or not closing will decrease or increase contacts must be determined locally. Obviously, rural and urban conditions differ radically in this regard.

(*b*) Are the children in coming to and going from school exposed to inclement weather or long rides in overcrowded cars?

(*c*) Is there an adequate nursing and inspection system in the schools?

(*d*) Is it likely that teachers, physicians and nurses can really identify and segregate the infected schoolchild before it has an opportunity to make a number of contacts in halls, yards, rooms, etc.? We suggest that children suspected of having influenza and held in school buildings for inspection should be provided with and required to wear face masks.

(*e*) Will the closing of schools release personnel or facilities to aid in fighting the epidemic?

(*f*) If schools are kept open, will the absence of many teachers lower the educational standards?

(*g*) If a number of pupils stay at home because of illness or fear, will they not constitute a heavy drag on their classes when they return?

(*h*) If schools are closed, is there likely to be an outbreak in any case when they are reopened?

Churches: If churches are to remain open, services should be reduced to the lowest number consistent with the adequate discharge of necessary religious offices, and such services as are held should be conducted in such a way as to reduce to a minimum the intimacy and frequency of personal contact.

Theaters: As regards theaters, movies, and meetings for amusement in general, it seems unwise to rely solely or in great part on the ejection of careless coughers. In the first place it is difficult to determine who is a careless cougher, and after each cough, danger has already resulted. It seems, too, that the closing of theaters may have as much educational value as their use for direct educational purposes, etc. Discrimination as to closing among theaters, movies, etc., on the basis of efficiency of ventilation and general sanitation may be feasible.

Saloons, etc.: The closing of saloons and other drinking places should be decided on the basis of the probability of spread of the disease through drinking utensils and the conditions of crowding.

Dance Halls, etc.: The closing of dance halls, bowling rooms, billiard parlors and slot-machine parlors, etc., should be made effective in all cases where their operation causes considerable personal contact and crowding.

Street Cars, etc.: Ventilation and cleanliness should be insisted on in all transportation facilities. Overcrowding should be discouraged. A staggering of opening and closing hours in stores and factories to prevent overcrowding of transportation facilities may be cautiously experimented with. In small communities where it is feasible for persons to walk to their work it is better to discontinue the service of local transportation facilities.

Funerals: Public funerals and accessory funeral functions should be prohibited, being unnecessary assemblies in limited quarters, increasing contacts and possible sources of infection.

4. *Masks.*—The wearing of proper masks in a proper manner should be made compulsory in hospitals and for all who are directly exposed to infection. It should be made compulsory for barbers, dentists, etc. The evidence before the committee as to beneficial results consequent on the enforced wearing of masks by the entire population at all times was contradictory, and it has not encouraged the committee to suggest the general adoption of the practice. Persons who desire to wear masks, however, in their own interests, should be instructed as to how to make and wear proper masks, and encouraged to do so.

5. *Isolation.*—The isolation of patients suffering from influenza should be practiced. In cases of unreasonable carelessness, it should be legally enforced most rigidly.

6. *Placarding.*—In cases of unreasonable carelessness and disregard of the public interests, placarding should be enforced.

7. *Hospitalization.*—The theory of complete hospitalization is that, if all the sick were hospitalized, the disease would be controlled. In certain somewhat small communities where hospitalization of all cases was promptly inaugurated, the disease did come quickly under control. It must be recognized, however, that unless every infective person can be detected and identified as such and removed to the hospital before he has infected others, hospitalization cannot be depended on to eliminate the disease.

In general, home treatment is to be advocated where medical, nursing and other necessary facilities are adequate, and where home treatment is not directly contraindicated by the danger of infecting others. The hospitalization in any case, mild or severe, should be undertaken only when facilities for home treatment are inadequate with respect to medical and nursing care or otherwise. The objection to routine hospitalization of mild cases lies in the fact that patients not already suffering from secondary infections may acquire them by exposure to hospital cases already so infected. The objection to the routine hospitalization of severe cases lies in the danger to the patient necessarily incident in the transfer from home to the hospital.

8. *Coughing and Sneezing.*—Laws regulating coughing and sneezing seem to be desirable for educational and practical results.

9. *Terminal Disinfection.*—Terminal disinfection for influenza has no advantage over cleaning, sunning and airing.

10. *Alcohol.*—The use of alcohol serves no preventive purpose.

11. *Sprays and Gargles.*—Sprays and gargles do not protect the nose and throat from infection, for the following reasons:

(*a*) So far as the knowledge of the committee extends, no germicide strong enough to destroy infective organisms can be applied to the nose and throat without at the same time injuring the mucous membranes.

(*b*) Irrigation of the nose and throat to accomplish the complete mechanical removal of the infective organism is impracticable.

(*c*) Their use tends to remove the protective mucus, to spread the infection and to increase the liability of actual entrance of the infective organisms.

(*d*) Their domestic use is liable to lead in families to a common employment of the same utensils.

(*e*) The futility of sprays and gargles has been demonstrated with respect to certain known organisms, such as the diphtheria bacillus and the meningococcus.

MISCELLANEOUS CONSIDERATIONS

1. Colleges, asylums and similar establishments may with advantage enforce rigid institutional quarantine against the outside world, if they begin in the early stage of an epidemic, provided they are so located and conducted as to render the procedure reasonably likely to be effective, even temporarily; for even temporary success will postpone the appearance of the disease, if it appears at all, to a time when the patients will be more likely to be able to have adequate medical and nursing care.

2. The recommended measures for control, even if they do not accomplish the desired end, should at least be instrumental in distributing the epidemic over a longer period of time, which in itself is highly desirable.

The statistics of the disease and the keeping of proper records are extremely important. The lack of knowledge regarding innumerable factors in reference to the disease makes all the more desirable complete case records, etc.

4. The committee wishes to emphasize the need for the complete statistical study of the collected data on the mortality, morbidity, case fatality, duration, economic aspects, and therapeutics of the disease. Through the collection of the facts in a uniform manner, and through the analysis of such tabulated data, especially mathematical graduation, and testing and study of the figures, important contributions to the natural history and typical characters of the disease may be expected. General principles as to the etiology,

fatality and practical management of influenza may follow from the extensive survey of the epidemic in the statistical laboratory as well as from the intensive bedside observation of single cases of the disease.

5. The measures recommended are calculated to be effective in the promotion of respiratory hygiene in general and particularly in the control of pneumonia and other respiratory infections.

ADMINISTRATIVE MEASURES FOR RELIEF

The committee on administrative measures for relief would submit the following considerations as constituting a summary of the important measures for meeting epidemic conditions:

I. *General Rules.*—1. Reporting should be made compulsory.

2. Isolation, by cooperation and education, should be practiced to a point where it does not diminish the willingness of the physician to report.

3. Placarding would seem to be subject to the same limitations as is isolation.

4. The closing of schools, prohibition of funerals, etc., being preventive measures, are not touched on in this report, except to mention that the closing of many agencies will release medical, nursing and volunteer services for special influenza work.

5. It may be necessary to grant authority and power to the health authorities to administer relief.

II. *Preliminary Measures.*—1. The listing and distribution of resources, including physicians, nurses, social workers, nurses' aids, clerks, domestics, laundresses, automobiles, chauffeurs, mask makers and volunteers of all kinds should be undertaken.

All available publicity channels should be used to promote volunteer service.

An appeal should be made for voluntary donors of human blood serum from convalescent influenza patients, to be held in readiness for use in treatment.

2. Resources should be centralized under one control, with central and branch headquarters, the city being districted for medical, nursing and other work.

The central headquarters should be ordinarily under the supervision of a board representative of the most important agencies concerned, the board's work to be administered through a manager (presumably the health officer) selected for his fitness.

3. The service should be maintained on a twenty-four hour basis, and a system of outgoing and incoming telephone service is essential.

4. The local authorities should get and keep in touch with state and national agencies.

III. *Current and Continuous Analysis of Case Situation.*—In the smaller communities a canvass should be made of all physicians, soliciting information as follows:

(*a*) Number of cases under care.
(*b*) Number of cases needing hospital treatment.
(*c*) Number of cases needing home nursing care.
(*d*) Number of cases requesting medical service but not reached.

This information will indicate the situation as regards the need for emergency nursing and medical service, and should be acquired as fully as possible in larger communities, through various agencies, such as a current lay or police canvass of homes, etc. The continuous classification of cases according to these groupings is of practical value.

IV. *Analysis, Augmentation and Organization of Principal Facilities.*—(A) Field Nursing: 1. Ordinarily nursing facilities utilized in general public health work should be diverted to meet the epidemic situation, and should be used on a district basis, with all other available facilities, under one supervision.

2. Nursing assistants, volunteers and the like should be used whenever possible in homes and institutions, under expert supervision, after classification and assignment on a basis of minimum standards as to fitness, and such intensive training in the care of influenza and pneumonia patients as may be feasible.

3. From the standpoint of the patient, home treatment is to be advocated, if medical, nursing, disease prevention and other facilities are adequate.

4. Restriction so far as possible through the pressure of public opinion should be brought against the unnecessary use of private nurses.

5. Automobile transportation should be provided, and the nursing service used to encourage isolation and education.

6. Special record forms are essential for this and the medical work, and a special subcommittee is proposed to meet this problem.

7. Provision as to housing and care should be made for out of town nurses.

8. We recommend further training with reference to influenza for all graduates of Red Cross home nursing courses and more extensive use of their services. This would necessitate frequent and careful registration (names, addresses and telephone numbers) and further information regarding personal health, age and ability and willingness to serve.

(B) Emergency Medical Service: 1. The medical service should be handled through the central office, the physicians being responsible to the central office, though perhaps assigned to district offices.

2. In this emergency service there should be utilized all available physicians, such as school and factory physicians, volunteers, practitioners on a paid basis, and fourth year medical students. This service should cover all calls reported as unreached by private physicians or received through other channels, and should be coordinated with the special nursing service, being provided with automobile transportation, machines being hired if necessary.

3. The emergency medical service should be used to select cases needing hospital care.

4. It may be feasible to institute a central clearing house in certain districts for private physicians' calls.

5. An arrangement should be made through the medical licensing board for the granting of temporary permits to practice to reputable physicians from out of the state, at the request of the Central Influenza Committee.

6. In some localities it may be feasible to district the local practitioner and to have him meet special calls on a part time basis for adequate compensation.

7. Certain of the relatively nonessential specialties should be discouraged and the physicians in those specialties urged to volunteer for emergency district work. This type of service may be operated on a pay or free basis.

8. Presumably some effort should be made, through an authoritative medical commission, to suggest standard methods of treatment and wise limitations as to therapeutic procedure.

(C) Hospital Facilities: 1. It is essential that the facilities, if possible, be kept ahead of the demand. A daily canvass should be made and data collected regarding available beds, medical and nursing needs, domestics, food, cots, supplies, etc. A regular visit by an inspector will probably prove more effective than an attempt at telephone communication.

2. Under most conditions a central clearing house, covering most if not all of the hospitals, is advisable for the admission of cases. Through this channel the severer cases may receive first consideration. Owing to constant changes in the hospital bed situation, the daily canvass of facilities may not be wholly depended on; on the contrary, it may usually be necessary to telephone the hospital in order to make sure regarding the admission of a particular case. In any event the hospitals, if facilities are inadequate, should be impressed with the necessity for admitting only the most severe or needy cases, pay or free. Special hospital arrangements should be provided for pregnant women.

3. It is advisable to add wards or tents or new equipment to existing institutions rather to establish entirely new emergency hospitals. If practicable, certain hospitals may be urged to handle influenza cases exclusively.

4. Nonemergency surgical and chronic medical cases amenable to home treatment should be dehospitalized.

5. A convalescent home, if adjacent to the hospital, may serve for the care of mild and convalescent cases, thereby increasing the space in the hospital for acute cases, obviously involving an increase in the nursing facilities.

6. A canvass of ambulance facilities should be made, ambulances being requisitioned with payment, or hired by contract, if necessary. Automobiles and motor trucks should be potentially mobilized for this purpose. Frequently military equipment may be used if accessible.

V. Social and Relief Measures: 1. The central office should keep the family advised regarding the patient, thereby saving telephone calls, trolley fares and worry on the part of the family, and thereby increasing the willingness for hospitalization.

2. Volunteer workers, such as Red Cross volunteers, teachers and relatives, should be placed in care of families in which the responsible members are dead or hospitalized, this service being under expert social supervision, and the families in touch with the supply system. Supervision of placed-out children is also necessary.

3. Homes should be investigated before patients are discharged into them, when destitution or other untoward circumstances are apparent.

4. Precaution should be taken that institutions and families too busy with the influenza situation to look after their own needs are covered by the general relief measures.

5. Ordinary charitable relief should be handled through the routine agencies, and the service coordinated with the other epidemiologic measures. Churches, lodges, etc., should be urged to handle their own cases, in order to relieve the pressure on the central agency. Aid should be immediate, without protracted investigation.

6. Recreation facilities (motoring, etc.) should be provided for the physicians and nurses while off duty.

VI. Food: 1. Available central cooking facilities should be used so far as is necessary, such as the dietetic equipment in high schools, normal schools, colleges, etc., with a delivery system to families and institutions in need.

2. Individual families should be encouraged to cook additional amounts, these to be delivered to central diet kitchens for distribution, a standard list of prepared foods needed being devised and advertised, with recognition of racial customs and preferences.

3. It may be necessary to establish canteens in sections of the city.

VII. Laundry: 1. A special collection and distribution system may be essential both for homes and for institutions.

2. It may be necessary to take over a public laundry with compensation, or a private nonmedical institution laundry.

VIII. Provision for Fatalities: 1. Death reporting should be prompt (twenty-four hours) and a record kept so as to insure prompt disposal of bodies.

2. A daily canvass of available coffins should be made, labor assured for construction, and possibly no coffins sold without the permit of the influenza administration office.

3. If morgue facilities are inadequate, a central place should be provided, with embalming facilities, for the temporary disposal of bodies.

4. A canvass of hearses should be made and regulations issued prohibiting unnecessarily long hauls, insisting on maximum loads, etc. A central control will prevent unnecessary duplication as to routes, etc.

5. A reserve supply of trucks and automobiles should be at hand for use in various ways in connection with the handling of fatal cases.

6. The number of graves required should be estimated and labor released from public works or secured through other channels (possibly military) for digging. Possibly temporary trench interment may be necessary.

IX. Education, Instruction and Publicity: Literature and special instructions will be necessary on many phases, including the following:

1. Instructions to physicians as to reporting, facilities available, district arrangements, etc.

2. Advice to physicians regarding treatment standards and suggestions.

3. Instructions for families, to be distributed by nurses, physicians, social workers, druggists and others covering the problems of care during the physician's absence.

4. Instructions to the public as to where aid may be secured, to be printed in various languages, and distributed by druggists, displayed in street cars, used in the press, etc.

5. Instructions for families on "What to do till the doctor comes."

6. Instructions to physicians, factory managers, school superintendents and others, urging the necessity for immediate home and bed treatment at the first sign of respiratory disease.

7. Popular literature on the essentials of adequate care, the danger of returning to work too soon, etc. Popular press space is worth paying for, if it cannot be secured otherwise.

8. Popular publicity as to legitimate medical, nursing, undertaker, drug and other charges, to prevent profiteering.

X. Miscellaneous: 1. The cooperation of pharmaceutic agencies should be secured to insure an adequate supply of drugs and druggists.

2. Influenza victims and their families should have "first call" on fuel deliveries.

3. While follow up procedures are not legitimately a factor in the epidemic situation, their consideration is essential to an adequate meeting of the entire problem. This means adequate provision for medical examination and nursing care, relief measures, industrial employment problems, and the follow up of special sequelae, such as cardiac affections and tuberculosis.

4. It is finally suggested that the health department draw up a program based on the foregoing outline, holding it in reserve for future use, if not immediately needed, and modifying the proposal to fit the size and other characteristics of the particular community.

THE BACTERIOLOGY OF THE 1918 EPIDEMIC OF SO-CALLED INFLUENZA

The epidemic disease known as influenza is believed to be due to an undetermined organism which causes an infection that lowers the resistance of the body as a whole, and of the respiratory organs in particular. This allows the invasion of other pathogenic micro-organisms. The most important complicating infections are due to the influenza bacilli, different strains of pneumococci and different varieties of streptococci. Some careful observers regard certain of these organisms as the primary cause.

In each case, one or several of these micro-organisms may be present. In different portions of the country the dominating variety of organism has been found to differ.

VACCINES

Assuming that the cause of the epidemic is an unknown virus, it does not seem possible at present to prevent the primary disease by vaccination with known organisms. Against the secondary infections there would seem to be a theoretical basis for the use of vaccines, and especially for the use of vaccines prepared from organisms responsibe for complications which may differ in various localities at various times. This variable bacterial flora may militate against the practical application of vaccination on a large scale, because it would seem to require frequently repeated vaccinations with the flora that may be encountered. It is impossible at present to evaluate the reports from the use of these vaccines adjusted to meet local conditions. More data obtained under carefully controlled conditions are needed.

Stock vaccines made from the influenza bacillus alone or from other bacteria have been used to a considerable extent. The injections of stock vaccines have seemed to mitigate to some degree some outbreaks of influenza, and also the severity of the complicating infections; but in those instances in which the results of the use of vaccine have been controlled, no appreciable results have been obtained. The fact that the vaccine is usually employed after the epidemic has broken out and is perhaps on a decline, and the fact that an unknown number of people have been exposed, make it very difficult to draw conclusions as to its efficacy.

RECOMMENDATIONS

Your committee recommends that until such time as the efficacy, or the lack of efficacy, of prophylactic vaccination against influenza is established, vaccine, if used, should be employed in a controlled manner, under conditions that will allow a fair comparison of the number of cases and of deaths among the vaccinated and nonvaccinated groups. Particular attention should be directed to securing data as to the period in the epidemic at which vaccinated and nonvaccinated persons developed the disease.

Your committee is of the opinion that the indiscriminate use of stock vaccines against influenza and influenza with pneumonia cannot be recommended.

Nothing in these recommendations should be interpreted as discouraging the use of a pneumococcus stock vaccine against lobar pneumonia.

This epidemic emphasizes the importance of properly equipped laboratories.

HISTORY AND STATISTICS OF THE EPIDEMIC

Your subcommittee wishes to say that in view of the fact that the historical and other data of the epidemic are still in process of collection, no positive statement can be made at the present time on the precise incidence of the disease in the American population. On the basis of the best data available, your subcommittee estimates that there were not less than 400,000 deaths from the disease in the United States during the months of September, October and November, 1918. The major portion of this mortality occurred between the ages of 20 and 40, when human life is of the highest economic importance. We would suggest that this subcommittee be authorized to cooperate with the special committee on statistical study of the epidemic of the section on vital statistics of this association, and that the data collected through the latter special committee be reported through the subcommittee on history and statistics of the epidemic to the general reference committee on the influenza epidemic. Standard forms for purposes of statistical tabulation, analysis and graphic presentation will be submitted in a supplementary report at an early date.

SUGGESTIONS

In view of the probability of recurrences of the disease from time to time during the coming year, health departments are advised to be ready in advance with plans for prevention, which plans shall embody the framework of necessary measures and as much detail as is possible. Laws plainly necessary should be enacted and rules passed now. Emergency funds should be held in reserve or placed in special appropriations, which appropriations can be quickly made available for influenza prevention work.

The probability that as an after-effect of the influenza epidemic there will be an unusually high pneumonia rate for several years should be taken into consideration.

Of measures for the control of the disease, bacteriologic studies as to the nature of the organisms causing the primary infection and as to bacteria associations, new and improved procedures leading to the production and use of effective vaccines and curative serums, and the fresh air treatment of the infected appear to offer most promise.

Catalase and Oxidation.—W. E. Burge reports in *Science*, Aug. 16, 1918, that as the result of investigations in the physiologic laboratory of the University of Illinois, it is determined that physical work and the ingestion of food increase oxidation in the body by stimulating the liver to an increased output of catalase.

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SATURDAY, DECEMBER 21, 1918

A GENTLE REMINDER

A blue slip to be used in remitting subscriptions and dues for Fellowship in the American Medical Association for 1919 is inserted in The Journal this week. Last week we explained its use under the heading "Practical Economy." The use of this slip by Fellows and subscribers will result in a considerable saving on the cost of sending the customary bills. Over 20,000 subscribers utilized the slip last year, and it is hoped that an even greater number will use it this year. Don't delay! It's the little things in life that count.

FACT AND OPINION ON THE PRESENT EPIDEMIC OF RESPIRATORY DISEASE

The recent meeting of the American Public Health Association in Chicago was devoted largely to the present epidemic of influenza. An abstract of the proceedings of the sessions devoted to this subject appears in this issue of The Journal. This abstract is not, of course, a verbatim report of the proceedings, but represents that which seems of permanent value, eliminating a large mass of discussion that was argumentative rather than of the nature of scientific evidence. There are certain large phases of the subject on which much evidence was presented leading to what might be expressed as a consensus of opinion. It must be borne in mind that this organization consists primarily of public health officials, though it includes many research workers and physicians engaged in medical practice and investigation.

The discussions relative to the etiology of the present epidemic resolve themselves into the belief that the bacillus of influenza is not the primary etiologic factor, and that the actual cause is as yet unknown. As indicated by present evidence, a coccus, perhaps a pneumococcus of Type IV, or the coccus described by Mathers and others as a green-producing streptococcus, or the diplostreptococcus described by numerous investigators abroad, seems to have impressed many as of importance in causing death. It seems reasonable to suspect that perhaps these observations all may refer to the same organism or to closely related organisms; but sufficient work has not yet been done with this organism to prove a definite etiologic relation to the epidemic. The reports, however, indicate that such organisms are found in a large majority of the cases of the disease, especially in those resulting fatally, and that if they are not the primary etiologic factors, they seem to bear a definite relationship to the complicating pneumonia and the resulting mortality.

A second point of elaborate discussion in the proceedings concerned the use of the face mask as a means of prevention. Arguments were made for and against the use of this mask. Most of those who took part in the discussion seemed to lose sight of the fact that definite evidence has been presented to show that the wearing of a face mask prevents the diffusion of *pathogenic organisms of which we have definite knowledge*. If a person coughs toward a plate of medium exposed at a certain distance from the mouth and nose, a large number of colonies of bacteria develop on the plate. If the same person provides himself with an adequate face mask and coughs toward the plate, the organisms do not appear and grow on the plate. This is a simple experiment which any investigator may easily demonstrate for himself. The organisms found on the plates are, in many cases, bacteria similar to those found in the lungs of persons dying in the present epidemic. There is reason to believe that a face mask properly worn will aid in the prevention of infection from these organisms. There is also evidence to the effect that face masks, properly worn and controlled, have prevented the spread of the epidemic in certain institutions, whereas it spread rapidly in other institutions where the face mask was not worn. While not conclusive, this evidence leads to the opinion that, properly used, the face mask has value in the prophylaxis of influenza. Whether or not it is worth while to attempt to mask entire communities, either small villages of a few hundred or a few thousand inhabitants or large municipalities, such as San Francisco, compelling all of the persons in the municipality to wear the mask in public over an extended period of time, there is grave doubt as to whether this procedure can be sufficiently controlled to make it of practical value. Not that the public does not cooperate fully with the health department in its effort, but that the efficiency of the cooperation cannot be made sufficiently perfect.

Incidentally, a paper presented by Lieutenant-Colonel Cummings of Newport News, Va., indicated to the satisfaction of most listeners that a significant factor in the spread of infection in Army camps was the inadequate washing of mess kits. Cummings was strongly imbued with the belief that hand to mouth infection was more important than mouth to mouth or, rather, face to face, infection. It was his belief that a special value attaches to the face mask in aiding in the prevention of hand to mouth infection.

Another greatly debated point concerned the use of prophylactic vaccines. As we have stated before, these vaccines are at present of two main types. One is a vaccine composed of various strains of the influenza bacillus, the other a mixed vaccine containing the various types of pneumococci, also streptococci, influenza bacilli and staphylococci. Both types have been given extensive trial, unfortunately, however, except in a few cases, without adequate scientific control. The indiscriminate vaccination of the population, vaccinating those who come and not vaccinating others, without keeping adequate records of both, can hardly yield evidence worthy of consideration for or against the use of vaccines as a prophylactic measure. We recently[1] pointed out that the use of the vaccines was wholly in the experimental stage. Since that time reports have appeared of definite, adequately controlled experiments with each of these vaccines. These indicate that this use is at best still in the experimental stage, and that these vaccines are probably not efficacious in the prophylaxis of influenza. It is well to repeat here that the question as to whether or not these vaccines are efficacious cannot be settled by argument as to the theory of their use or by statement of opinion. The question is one that is susceptible of scientific proof.

SCURVY AND CONSTIPATION

In view of the departures from the customary character of the diet that are impending or already in operation to a large extent among the civil population, as well as among the armies of the world, it is fortunate that scurvy has again become the subject of extensive scientific investigation. This disease is admittedly associated with alterations in the diet, and commonly has manifested itself prominently when certain extensive changes in the usual rations have been necessitated by force of altered food conditions. We have recently referred to some of the conflicting views regarding scurvy, particularly as they are elucidated by modern experience with antiscorbutic methods.[2] The symposium on diseases due to deficiencies in nutrition—an important feature of the session of the American Medical Association last June—helped to secure the formulation of the debated points of view.[3]

We must revert here to the theory of McCollum, which has been widely quoted of late. As he was unable to maintain guinea-pigs—the classic animal for the study of experimental scurvy—in health on a diet of oats and milk, from which he asserts that nothing is lacking for the adequate nutrition of rats and swine, McCollum believes that the physical texture rather than the chemical make-up of the scorbutic diet must be at fault. As he develops his view, the guinea-pig ordinarily thrives only on diets that contain a succulent vegetable, since its cecum becomes packed with feces on diets that are unsuited to its digestive tract. The cecum in this species is very large and delicate, and such a constipating diet as oats and milk causes malnutrition because of the physical properties of the feces that are formed from it, rather than because of a lack of any antiscorbutic substance.

The investigations of Cohen and Mendel[4] at Yale University are not in harmony with the belief that intestinal stasis is the sole predisposing factor in the production of scurvy or that the action of well known antiscorbutics can be explained as due to their laxative effects. For example, in the case of certain selected diets a small amount of milk ingested daily permitted the onset of symptoms of scurvy, while larger quantities, which were not less constipating, caused the scorbutic symptoms to disappear. Moreover, aids to the ready elimination of feces, like differing amounts and kinds of roughage, caused no corresponding change in the course of the disease. The Yale investigators conclude that roughage in the diet plays, if anything, a minor accessory rôle in the prevention of scurvy. This disease is not essentially dependent on constipation as a causative factor, though the latter may aggravate the symptoms.

Hess has expressed himself in a similar vein:

> Observations of many cases of infantile scurvy have convinced us that constipation plays no essential rôle in this disease. In reviewing the many cases that we have seen we find that the infants were not constipated to a greater degree than normal babies, and that the disorder bore no parallel relationship to the activity of the bowels. Furthermore, as brought out in a recent paper, potato, which is a sovereign remedy for scurvy, is not a laxative, and malt soup preparations, which most readily lead to this disorder, are rather laxative than constipating. To this evidence may be added a recent experience that infantile scurvy does not yield to treatment by liquid petrolatum, but that its symptoms are rapidly alleviated by small additions of orange juice to the dietary, so small as to be without apparent effect on the bowels.

The accord between the English investigators, Chick, Hume and Skelton,[5] and the American workers just quoted serves to keep scurvy for the present in the domain of diseases due to deficiencies of nutrition, and gives renewed significance to the careful study of antiscorbutic agents. For, as Hess[3] has remarked, if the protective or curative values of antiscorbutic foods are, as McCollum and Pitz have recently contended, merely dependent on their laxative properties, and interchangeable with laxatives, such as liquid petrolatum or phenolphthalein, then scurvy is in no sense whatsoever due to food deficiency.

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[1] Serums and Vaccines in Influenza, editorial, The Journal A. M. A., Oct. 26, 1918, p. 1408.

[2] Scurvy and Antiscorbutics, editorial, The Journal A. M. A., Dec. 14, 1918, p. 2000.

[3] McCollum, E. V.: The "Vitamin" Hypothesis and the Diseases Referable to Faulty Diet, The Journal A. M. A., Sept. 21, 1918, p. 937. Hess, A. F.: The Rôle of Antiscorbutics in Our Dietary, ibid., p. 941.

[4] Cohen, B., and Mendel, L. B.: Experimental Scurvy of the Guinea-Pig in Relation to the Diet, Jour. Biol. Chem., 1918, **35**, 425.

[5] Chick, H.; Hume, E. M., and Skelton, R. F.: The Antiscorbutic Value of Cow's Milk, Biochem. Jour., 1918, **12**, 131.

THE RELATION OF SANITATION AND DRAINAGE TO MALARIA

In the scheme of disease prevention, sanitation is an essential factor; and in no disease has this been more decisively established than in malaria. Malaria flourishes chiefly in tropical or semitropical climates where drainage is defective, and consequently where conditions are propitious for the breeding of mosquitoes. The campaigns in eastern Europe have afforded excellent opportunities for emphasizing the force of this statement. In the Struma and Vardar valleys, consisting of marshy lands in which mosquitoes abound, malaria was extremely prevalent. Entente armies have been stationed there for years. The reclamation and drainage undertakings set in motion by British and French engineers have had the result already of destroying many of the mosquito breeding haunts and have decreased the prevalence of malaria. When the drainage plans have been completely carried out, these regions, which have been practically uninhabited for generations, will again become fruitful tracts of land able to support a large population.

Another conspicuous instance of the good effects of drainage and sanitation is provided by the island of Cyprus.[1] In 1878 malaria was so prevalent in this island that it was referred to as a "hotbed of malaria," and troops were withdrawn from the island. Antimalarial measures were inaugurated there in 1913 by Sir Ronald Ross. These measures included drainage, the clearance of land by cutting grass, and the stocking of tanks with goldfish. During this war both troops and prisoners have been quartered there, and yet no primary cases of malarial infection have occurred among the prisoners, while the incidence rate of malaria among the troops has been 0.4 per cent. Assistant Surgeon-General H. R. Carter has pointed out[2] that mosquitoes will breed freely in wild celery, which grows in water varying from 2½ to 6 feet in depth, and in lotus beds where the leaves of the plant have fallen into the water and adhered together as they decay. The water hyacinth, *Eichhornia crassipes,* although a highly ornamental plant, provides one of the most frequent means of shelter for the mosquito. In the Madras Presidency an outbreak of malaria was due to the fact that the plant afforded a convenient refuge to mosquitoes.

A problem of a similar nature confronted Colonel Truby, M. C., U. S. Army, who, in his annual report as chief medical officer of the health department of the Panama Canal, stated that the water lettuce, *Pistia stratiotes,* gives shelter to *Mansonia titillans,* and that additional studies will be carried on from time to time with the view of discovering an economical and practical method of eradicating the plant and its associated mosquito. If malaria were extirpated, as it is possible for it to be extirpated, the tropics would lose a great deal of their unhealthfulness for white people.

Sanitation, agriculture and economics are inextricably bound together, and the war, in the instances of Mesopotamia and Greece, has once again brought into prominence the fact that drainage and other obvious sanitary measures will abolish the mosquito and render the tropical and subtropical zones sufficiently healthful for the white man. Thus we may reasonably hope that the time is not far distant when the wonderfully fruitful soil of tropical climates may be cultivated and made useful in the support of humankind.

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[1] Trop. Dis. Bull., Oct. 15, 1918, p. 233.

[2] Carter, H. R.: Breeding of Anopheles Quadrimaculatus in Deep Water and at a Distance from Shore, Pub. Health Rep., 1918, **33**, 571.

THE UTILIZATION OF CALCIUM AND SOME OTHER ELEMENTS IN CERTAIN VEGETABLES

"It is not difficult," the Food Guide of the United States Food Administration tells us, "to understand why vegetables and fruits are so important. Only a few are especially valuable as fuel or as a source of protein, but almost all are high in mineral salts and can supply the 'roughage' desirable in the diet. Some also contain the vitamins, the leafy vegetables being especially valuable because, like milk, they contain the two kinds. The 'green,' leafy vegetables, like spinach, cabbage, Brussels sprouts, asparagus and lettuce, are the ones that help most in these last ways—'protective foods,' they have been called. They are rich in the iron, calcium and other minerals that some of the other foods lack. The use of plenty of these vegetables should go far toward keeping up health."[1]

Hasty generalizations of this sort, helpful as they may be, are liable to include much that is conjecture or derived from reasoning by analogy. It is the duty of the contemporary science of nutrition to check up every pronouncement of fundamental scope so far as it is not already firmly established on the bed rock of experimental observation. On one aspect of the use of certain vegetables in the dietary, recent investigations have shed some light. In infant nutrition, suitable plant products, such as carrots and spinach, have come more and more into dietary vogue within the past two decades. It is understood that they are comparatively rich in calcium, an element essential to the nutrition of growth, found at best in small quantities in cereals and flesh products, but abundant in milk. The value of these green vegetables has been attributed in part to their effect on the mineral metabolism.[2] McClugage and Mendel[3] of the Yale Laboratory of Physiological Chemistry have specially investigated the relative availability of the calcium of carrots and spinach in the animal economy. Their results show that when these vegetables were added to the diets of animals the calcium was not so well utilized as is the calcium in milk or in calcium carbonate. Hence McClugage and Mendel arrive at the deduction that so far as calcium is concerned, if milk were not available, the addition of a suitable calcium salt would be quite as rational a procedure as a vegetable addition. Furthermore, in order to add to the diet an appreciable amount of calcium from a vegetable source, it would be necessary to feed large quantities of the vegetables, which in itself is a rather difficult procedure in the case of infants.

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[1] Food Guide for War Service at Home, prepared under the direction of the United States Food Administration, New York, Charles Scribner's Sons, 1918.

[2] Courtney, A. M.; Fales, H. L., and Bartlett, F. H.: Some Analyses of Vegetables, Showing the Effect of the Method of Cooking, Am. Jour. Dis. Child., July, 1917, p. 34.

[3] McClugage, H. B., and Mendel, L. B.: Experiments on the Utilization of Nitrogen, Calcium and Magnesium in Diets Containing Carrots and Spinach, Jour. Biol. Chem., 1918, **35**, 345.

As the Yale investigators remind us, this outcome does not speak in any way against the vegetables as sources of vitamins, iron or other dietary factors. The implied warning is that it may be an unsafe procedure to use vegetables extensively as a dietary substitute for milk in the nutrition of children unless they respond to these foods differently from the laboratory animals on which experiments were made. It is always wise to be prepared to meet the contentions of the faddist, who is likely to see only advantages and be blind to the shortcomings of his preferred practices.

Current Comment

THE HEALTH OF THE NAVY

The annual report of the Surgeon-General of the Navy, covering the fiscal year 1918, has just been received. Under present circumstances it is a more interesting and human document than in normal times of peace. The rapid expansion in the personnel of the Navy during the war included enlargement of the Medical Corps to over 3,000 officers, this enlargement following the widening of the Navy's entire sphere of activity. The activities, as pointed out by Surgeon-General Braisted, included the establishment of hospitals abroad, care of the battleship fleet, medical personnel for the marines and the manning of three hospital ships, and finally, the care of the great inland training station, as well as of several training stations situated on the coasts. The health of the Navy has been excellent, affected only by epidemics which have seized the community in general. The general admission rate for the entire Navy for all causes—disease, injuries and casualties—during the six months from Jan. 1 to June 30, 1918, is 716.50 per thousand per year as compared with the average annual rate of 624.23 for the eight peace years from 1909 to 1916. The annual death rate for disease for the six month period was 5.9 per thousand as compared with 2.7 for the ten year period from 1907 to 1916. It is pointed out that this record is related to the severe weather conditions of last winter so that the death rate for disease during the first three months was 8.9 and for the second three months, 3.3—a figure approaching the average for peace times. The work of all the different departments of the Naval Medical Corps is described in detail, as well as the sanitation of individual ships and stations. Special reports are devoted to the various diseases that have been prevalent, as cerebrospinal meningitis, the pneumonias and measles. In discussing the venereal diseases, it is pointed out that the figures now obtainable from men examined for induction into the Army under the selective draft indicate that the percentage of men in either the Army or the Navy infected with venereal disease is lower year after year than the percentage of males of corresponding ages in civil life. The records for 1918, while higher than for 1917, are nevertheless much lower than for the previous eight or nine years. This report is of especial interest to those studying sanitation problems of military forces.

WHY NOT ISOLATION AND QUARANTINE?

The present epidemic of so-called influenza is as contagious, and certainly as fatal, as smallpox, scarlet fever or measles. While we know little of its etiology or mode of transmission, we know as much of these two factors in this disease as we know of the same factors in the three other diseases mentioned. There is reason to believe that all four spread by contact—from man to man. When smallpox, scarlet fever or measles is prevalent, rigid isolation and quarantine are enforced, and it is quite certain with at least a fair measure of success. Should not the same methods of prevention be more vigorously adopted in the present epidemic? When it is realized that already from one fourth to one third of the population of this country has been subject to the disease, that more than 300,000 persons have died as a result of the infection, the suggestion that every case of influenza be isolated and that quarantine against these cases be rigidly enforced is worthy of serious consideration.

A BACTERIAL FACTOR IN AUTOINTOXICATION

Before the complex of uncertainties vaguely described as gastro-intestinal autointoxication can be intelligently unraveled and understood, it will be necessary to know far more than is at present appreciated regarding the manifold factors involved. Although some would limit the use of the term "autointoxication" to poisoning with products of cellular metabolism, it is practically impossible at present to separate this eventuality from the effects that may be traceable to the absorption of toxic products formed by putrefaction within the alimentary canal or introduced into it with the ingested food. Judging by the fact that transformation products of phenol are almost always present in the urine, we may properly assume that this aromatic compound is a common product of the bacterial disintegration of proteins in the gastro-intestinal tract, even if it be admitted that a small amount may be of endogenous origin.[1] In cases of ileocecal fistula in which the food residues do not delay in the large intestine, phenol derivatives are usually absent from the urine. Furthermore, in the few reported classic instances of animals kept alive without bacteria, the same failure of phenol production has been reported.[2] The immediate precursors of phenol are assumed to be the aromatic amino-acids tyrosin and, perhaps, phenylalanin, both of which are obtained as familiar digestion products of proteins. The question as to the micro-organisms specifically responsible for the reactions involved has remained more uncertain. Indol formation, another phenomenon long defined as a characteristic feature of autointoxication and for which the tryptophan group in the protein molecule is essential, has been attributed to the *Bacillus coli* group so abundantly found in feces. Recent studies by Rhein[3] at the Hygienic Institute in Posen have led him to conclude that the familiar production of phenol in the human alimentary canal is due to a special race or type of *B. coli* designated as *B. coli-phenologenes*. It is characterized by failure to form indol. If this conclusion is further substantiated, the observation will serve to add another fact of definite character with the help of which the complete story of autointoxication can perhaps ultimately be written.

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[1] Moore, C. U.: The Phenol Excretion in the Urine of Infants, Including the New-Born, Am. Jour. Dis. Child., January, 1917, p. 15.

THE PSYCHOLOGY OF THE HEALTH OFFICER

An unbiased observer after listening to the discussions concerning influenza at the session of the American Public Health Association would come to the conclusion that some of those present were concerned largely with justifying their course of action during the epidemic; in other words, that they had not come with an open mind. Argument after argument was made on the basis of broad generalization or of unverifiable statistics. This is especially to be regretted because most of the points under discussion concerned questions susceptible of scientific proof. None of the health officers need to apologize for what they have done or left undone. The prophylaxis and treatment of this disease on a scientific basis depend on an accurate knowledge of its etiology and epidemiology. But the etiology of the epidemic is unknown, and its mode of transmission is unknown. Health officers had no guide of action and, by the very nature of things, could not have such a guide as long as our knowledge of the disease is as meager as it is. All had done what they thought was for the best; this was indicated by the spirit of the meetings and the discussions. These showed that the health officers of the states and of the large and small communities realized their responsibility and were more than anxious to do the right thing.

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[2] Nuttall, G. F., and Thierfelder, H.: Ztschr. f. physiol. Chem., 1896, **22**, 62.

[3] Rhein, M.: Ueber die Bildung von Phenol im menschlichen Darm, Biochem. Ztschr., 1917, **84**, 246.

Stammering.—Treatment rests on the principle of educated self-control. Concrete application of this principle is directed, first, toward conscious control of the peripheral speech mechanism, and, second, toward direct control of the emotional and nervous disturbance.—E. L. Kenyon.

Medical Mobilization and the War

Personnel of the Medical Corps

For the week ending December 13, there were in the Medical Corps 31,045 officers, a decrease of fifty-nine since the previous week. This personnel includes four major-generals, five brigadier-generals, 219 colonels, 513 lieutenant-colonels, 2,487 majors, 10,098 captains and 17,719 lieutenants. There were in active service 30,222, a decrease of 157 since the previous week. Discharges to date include 4,148 officers.

Medical Division of the Provost-Marshal's Office Disbanded

The Medical Division of the Provost-Marshal's Office is being disbanded. Lieut.-Col. Hubert Work and Capt. D. Chester Brown have received honorable discharges and have returned to their homes. Col. F. R. Keefer will shortly return to service with the regular Medical Corps.

Colonel G. L. Edie Recommended for Promotion

Colonel Guy L. Edie of the Army Medical Corps, at present chief surgeon at Base Section No. 5, services of supply, France, has, it is reported, been recommended for promotion to the rank of brigadier-general by Gen. George H. Harries, commanding general of the base. In making this recommendation General Harries says:

> It would be impossible to fairly set forth, within the limits of such a communication as this, the many reasons why Colonel Edie is deserving of recognition. In a situation where difficulties mounted so high and advanced so swiftly that they seemed at times to be almost overwhelming he accomplished greatly. Despite the lack of medical personnel and the construction which he strove to secure, he never approached failure. Especially was he supremely successful during the epidemic of influenza-pneumonia, which came to us on transports; for the service he then rendered the Army owes him more than it can ever pay. An officer of rich experience, mature judgment and keen initiative, he has earned much more than I now recommend be given to him.

Extracts from Weekly Bulletin A. E. F., No. 32

Nov. 18, 1918

This bulletin calls attention to the necessity for continued warfare against disease in the A. E. F., and points out that the job is 99 per cent. prevention of disease. Special attention again is called to the necessity of plenty of fresh air in disease prophylaxis. The weekly report of disease indicates that diphtheria again shows an excessive rate, the cases being reported widely from the A. E. F., especially concentration of cases occurring at hospital centers. It is said that many of the cases are secondary cases developing within the hospital and among the hospital personnel. Good aseptic ward technic and the conscientious wearing of masks it is believed will prevent much of the secondary infections.

A warning is issued to troops not to open boxes which the enemy has left behind in certain regions. These wooden boxes bear the inscription "Vorsicht! Infectiöse Materiel."

An Item for the Sports Department

In the final battle of the season the Camp Greenleaf football eleven defeated the eleven from Camp Dix by a score of 34 to 0. The Camp Greenleaf team was entirely medical, trained by doctors and composed of the enlisted men of the medical department. According to Washington papers, the Camp Greenleaf eleven thus become the Army football champions of 1918.

Decorated for Bravery

Decorations for bravery in action have been conferred on the following medical officers of the American Expeditionary Forces: Capt. Earl V. Morrow, M. C., U. S. Army, Portland, Ore.; Capt. George P. O'Malley, M. C., U. S. Army, Cleveland, on duty with a British unit, the distinguished service medal by the British government for bravery in rescuing wounded under fire; Lieut. Frank H. McGregor, M. C., U. S. Army, Mangum, Okla., awarded a medal for bravery by the British forces; Ernest C. Rowland, Allentown, Pa., an American Army ambulance driver serving with the French army, although wounded by shell fragments, stuck to his post and delivered the wounded under his care to the hospital, has been awarded the Medaille Millitaire and Croix de Guerre with palms.

Prisoners

It is reported that Lieut. Henry L. Rothman, M. C., U. S. Army, Washington, Mo., is a prisoner in Germany.——It is reported that Capt. Benjamin P. Burpee, M. C., U. S. Army, Manchester, N. H., is a prisoner in Camp Villingen, Germany, and is in good health.

Medical Officers Gassed

It is reported that the following medical officers on duty with the American Expeditionary Forces in France are suffering from having been gassed: Lieut. Robert H. Breslin, M. C., U. S. Army, Providence, R. I., on duty with the 103d Infantry; Lieut. Eugene H. McCaffery, M. C., U. S. Army, Sprague, Wash.; Capt. Fred A. Lieuallen, M. C., U. S. Army, Portland, Ore.; Major Philip G. Cole, M. C., U. S. Army, Helena, Mont.; James P. H. Ruddy, Scranton, Pa., and Lieut. Walter T. Bronson, Pueblo, Colo.

Wounded

The following medical officers are reported to have been wounded: Lieut. Bernard Bolka, M. C., U. S. Army, Chicago, slightly; Lieut. Sloan A. Brown, M. C., U. S. Army, Coraopolis, Pa., slightly; Lieut. Thomas S. Williams, M. C., U. S. Army, Dallas, Texas, severely; Major Frank E. Winter, M. C., U. S. Army, Santa Ana, Calif., severely; Lieut. Herbert G. Hempler, M. C., U. S. Army, Creal Springs, Ill., degree undetermined; Lieut. Samuel J. Benoit, M. C., U. S. Army, Gardner, Mass., degree undetermined; Lieut. Charles C. Ryan, M. C., U. S. Army, Republic, Pa., severely; Lieut. Robert LeRoy Leighton, M. C., U. S. Army, Spring Lake, N. J., slightly; Lieut. J. Armin Stackhouse, M. C., U. S. Army, Ambler, Pa., degree undetermined; Lieut. Lomax Gwathmey, M. C., U. S. Army, Norfolk, Va., degree undetermined; Capt. William S. Horn, M. C., U. S. Army, Fort Worth, Texas, severely; Lieut. Milford Arthur Leach, M. C., U. S. Army, Grand Rapids, Mich., slightly; Lieut. Edward S. Huckins, M. C., U. S. Army, Bay City, Mich., degree undetermined; Lieut. Lloyd E. Wurster, M. C., U. S. Army, Philadelphia, severely.

HONORABLE DISCHARGES AND RESIGNATIONS, MEDICAL CORPS, U. S. ARMY

ALABAMA

Gurley—Graham, B. E.
Montgomery—Salter, P. P.

ARIZONA

Nogales—Gustetter, A. L.

ARKANSAS

Hoxie—Stidham, J. H.

CALIFORNIA

Los Angeles—Chambers, W. J.
Pasadena—Smith, R. L. I.
San Francisco—Fish, J. B.
  Wagner, H. L.
  Wilcox, R. W.
Santa Cruz—Hosford, W. J.
Tulare—Puller, R. N.

COLORADO

Colorado Springs—Swan, W. H.
Denver—Allen, J. H.
  Gorsuch, J. C.
  Holden, G. W.
  Lewis, R.
Idaho Springs—Morehouse, J. A.

CONNECTICUT

Bridgeport—Fleck, H. W.
Hartford—Blair, E. H.
Middletown—Coleburn, A. B.
New Haven—Braude, S. H.
  Whiting, L. C.

DISTRICT OF COLUMBIA

Washington—Bryan, J. H.

FLORIDA

Arcadia—Edmondson, J. W.
Miami—Jaudon, E. K.
Petersburg—Wood, A. J.
Plant City—Alsobrook, J. W.
Tampa—Coon, G. B.

GEORGIA

Acworth—Humphries, W. C.
Ashburn—McKenzie, G. G.
Atkinson—Moody, E. A.
Atlanta—Cromer, J. L.
  Daly, R. R.
Columbus—Anderson, J. M.

IDAHO

Nampa—Hull, A. R.

ILLINOIS

Barry—Beavers, C. E.
Bloomington—Sanderson, C. R.
Blue Mound—Moffet, W. T.
Bridgeport—Schrader, J. F.
Champaign—Hoffman, J. N.
Chicago—Dorland, W. A. N.
  Fuller, W.
  Keyes, A. B.
  Linnell, B.
  Magnuson, P. B.
  McCahill, M.
  McKenna, H.
  Meyers, J. K.
  Miller, H. C.
  Reinhart, M. D.
  Sondel, H. M.
Dallas City—[illegible] T. A.
[illegible] L. A.
[illegible] O.
[illegible] W. J.
[illegible] B.
[illegible] M.
[illegible] C. B.
[illegible] R.

INDIANA

Batesville—Samms, M. L.
Ellettsville—Harris, W. W.
Greenfield—Allen, J. L.
Indianapolis—Allen, H. R.
  Wheeler, J. T.
LaPorte—Wilcox, F. T.
Logansport—Ballard, C. A.
Muncie—Kirklin, B. R.
North Webster—Druley, G. N.
Peru—Van Mater, G. G.
South Bend—Lent, E. J.
Terre Haute—Caffee, A. H.
Vincennes—Anderson, R. A.

IOWA

Armstrong—Knipe, J. B.
De Witt—Lyon, M.
Fort Madison—Grimwood, W. H.
Hazelton—Hunt, H. H.

KANSAS

Americus—Brickell, J. B.
Kingsley—Gafford, G. M.
McPherson—Engberg, A.
Soldier—Adams, J. H.

KENTUCKY

Louisville—McKinney, W. T.
Martha—Bailey, O.

LOUISIANA

Caspiana—Stamper, J. R.
Lake Charles—Martin, J. G.
Shreveport—Hunt, R.

MARYLAND

Baltimore—Howland, J.
  Shearer, J. P.
  Stuart, D. D. V.
  Whittle, H. L.
  Wislocke, G. B.

MASSACHUSETTS

Boston—Dodge, A. M.
  Frothingham, C.
  Kelly, J. M.
  Lund, F. B.
  Treanor, J. P.
Brockton—Fullerton, W. W.
Brookline—Barnes, H. A.
Lawrence—Merrill, W. H.
Waverly—Abbott, E. S.
West Somerville—Pillsbury, E. D.

MICHIGAN

Detroit—Hathaway, J. H.
  McAlpine, A.
Holland—Thomas, G. H.
Owosso—Wilson, E. T.

MINNESOTA

Howard Lake—Moffatt, A. G.
Minneapolis—Elliot, J. N.
Owatonna—Stewart, A. B.
St. Paul—Hubert, R. I.
St. Peter—Daniels, J. W.
State Sanatorium—Beach, G. W.

MISSISSIPPI

Meridian—Klein, K. T.

MISSOURI

Cane Hill—Allder, A. E.
Cassville—Bailey, W. T.
Excelsior Springs—Grace, T. W.
Fairview—Russell, S. A.
Grand Pass—Coon, E. H.
[illegible] S. C.
[illegible] G. V.
  [illegible] J. D.
  Wallerdorf, L. H.
St Louis—Hamel, A. H.
  Koessel, A. W.
  Paugh, P. G.
  Walsh, L. S. N.

MONTANA

Malta—Blankenhorn, C. E.

NEW JERSEY

Grantwood—Brundage, P. E.
Jersey City—Rubacky, J. F.
Palmyra—Voorhis, C. F.
Passaic—Smith, E. W.
Paterson—McDede, F. F.

NEW MEXICO

Rosewell—Presley, T. E.
Tyrone—Davis, E. P.

NEW YORK

Albany—Giffen, J.
Bath—Parkhurst, G. M.
Bedford Hills—Norman, M.
Brooklyn—Ferstler, M. P.
  Gusman, F.
  Margulies, A. C.
  Staub, G. C.
  Walther, J. W.
Huntington—Donahue, W. J. A.
Katonah—Noe, P., Jr.
Lockport—Mayne, H. H.
Mount Morris—Leach, A. E.
New York—Allis, J. A.
  Banker, G. N.
  Berens, P.
  Ellis, T. F.
New York—Hyman, S. M.
  Kammerer, F.
  Kane, A. M.
  Kaunitz, J.
  Lipsett, P. J.
  Pollitzer, S.
  Reece, H. B.
  Spellman, D. S.
  Young, F. G.
Oneonta—Smith, J. C.
Richmond Hills—Parizot, E. H.
Rochester—Hohndorf, J. L.
  Knope, F. H.
Schenectady—Heatly, J. A.
Syracuse—Banford, T. E.
  Champlin, P. M.

NORTH CAROLINA

Greensboro—Roberson, G. B.
Highlands—MacPherson, G. S.
Waynesville—Abel, J. F.

NORTH DAKOTA

Fargo—Kaess, A. J.
Lisbon—Patterson, T. C.

OHIO

Athens—Merwin, J. T.
Cincinnati—Fox, A. J.
  Jenkins, W.
Cleveland—Bruner, W. E.
Columbiana—Mellon, J. A.
Columbus—Bay, W. F
Coshocton—Lower, J. D.
Delphos—Wolfe, J.
Elyria—Hart, W. E.
Fostoria—Leonard, W.
[illegible]
[illegible] A.
  A.
Tiffin—Gosling, J. A.
Toledo—Baldwin, M. G.
  Newberg, F. L.

OKLAHOMA

Boswell—McPherson, V. L.
Kingfisher—Pendleton, J. W.

OREGON

Ashland—MacCracken, G.

PENNSYLVANIA

[illegible]
[illegible] A.
[illegible] M.
[illegible] H. B.
  Burns, J. P.
  Chance, B.
  Epstein, A.
  Foltz, J. C.
  Furbush, C. L.
  Pearce, R. M.
  Smith, A. D.
  Van Horn, L.
Pittsburgh—Boggs, J. C.
  Williams, I.
Pittston—Madden, J. T.
Ridgway—Flynn, J. G.
Sharpesburg—Graham, N. R.
York—Wise, F. R.

SOUTH CAROLINA

Santuck—Jeter, J. T.

SOUTH DAKOTA

Alexandria—Maytum, W. J.
Beresford—Elliott, A. V.

TENNESSEE

Alexandria—Cotten, L. D.
Columbia—Porter, O. J.
Martin—Haley, C. F.
Memphis—Levy, L.

TEXAS

Call—Martin, J. D.
Dallas—Bernard, J. T.
  Poulter, J. W.
Fort Davis—Harris, J. M.
Friendship—Hadley, W. A.
Greenville—Cantrell, C. E.
Sequin—Bergfeld, A. W.
Shamrock—McDowell, J. E.
Snyder—Howell, R. L.
Waco—Hale, J. W.

VIRGINIA

Norfolk—Williams, R. L.
Palmer Springs—Harman, W. C.
Salem—Brown, W. E.

WASHINGTON

Everett—Durand, W. S.
Wellpinit—Wise, A. H.

WEST VIRGINIA

Martinsburg—Tonkin, H. G.

WISCONSIN

Milwaukee—Dudley, L. W.
Nashotah—Donnelly, F. J.
Oconomowoc—Wilkinson, M. R.
Rice Lake—Dawson, D. L.
Knapp, E. J.
Stevens Point—Walters, F. A.
Waupun—Taylor, L. L.

WYOMING

Sheridan—Newell, M. A.

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Alabama

To Camp Forrest, Ga., from Fort Oglethorpe, Lieut C. E. FARISH, Mobile.

To Camp Logan, Texas, from Fort Oglethorpe, Capt. W. A. SELLERS, Montgomery.

To Camp McClellan, Ala., base hospital, from Fort Oglethorpe, Lieut. A. B. PICKERING, Plantersville.

To Camp Shelby, Miss., base hospital, from Fort Oglethorpe, Lieut. W. H. ANDERSON, Athens.

To Camp Sheridan, Ala., base hospital, for instruction, from Camp Crane, Capts. N. P. COCKE, Birmingham; G. J. WINTHROP, Mobile; from Camp Jackson, Capt. E. M. PRINCE, Birmingham.

To Camp Zachary Taylor, Ky., base hospital, from Fort Oglethorpe, Major H. T. LAY, Montgomery.

To Eastview, N. Y., from Fort Oglethorpe, Major J. N. BAKER, Montgomery.

To Fort Des Moines, Iowa, for instruction, from Camp Custer, Major J. M. MASON, Birmingham.

To Fort McPherson, Ga., from Fort Oglethorpe, Capt. W. L. THORNTON, Birmingham.

To Hoboken, N. J., from Camp Sevier, Lieut. P. Y. DONALD, Marion Junction.

Arizona

To Fort Logan H. Roots, Ark., for instruction, from Camp Crane, Capt. L. P. KAULL, Jerome.

Arkansas

To Camp Crane, Pa., from Hoboken, Lieut. T. E. SANDERS, Hot Springs.

California

To Camp Beauregard, La., as tuberculosis examiner, from Camp Cody, Lieut. J. Y. BARTHOLOMEW, San Francisco.

To Camp Crane, Pa., from Hoboken, Capt. J. H. TITUS, Ontario. Surgical group, from Camp Kearney, Capt. J. C. ROBERTSON, Modesto.

To Camp Custer, Mich., from Ann Arbor, Lieut. J. de ANGULO, Stanford University.

To Camp Dix, N. J., base hospital, from Camp Crane, Major C. G. TOLAND, Los Angeles.

To Camp Kearney, Calif., from Camp Cody, Lieut W. W. MULVEHILL, Los Angeles.

To Camp Lewis, Wash., from Fort Oglethorpe, Lieut. R. A. SANDS, Ocean Park.

To Camp Meigs, Wash., from Fort Oglethorpe, Lieut. P. L. WISE, San Jose.

To Camp Wadsworth, S. C., base hospital, from Camp Crane, Capt. H. K. FABER, San Francisco.

To Camp Zachary Taylor, Ky., base hospital, from Camp McClellan, Capt. T. C. McCLEAVE, Oakland.

To Colonia, N. J., from Camp Crane, Lieut. H. W. NIELSEN, Fresno.

To Eastview, N. Y., from Fort Oglethorpe, Capt. A. F. HIGGINS, Sacramento.

To Fort McDowell, Calif., from Camp Fremont, Lieut.-Col. H. H. SHARPE.

To Fort McHenry, Md., from Cape May, Capt. F. F. SPRAGUE, Los Banos.

To Fort McPherson, Ga., from Camp Crane, Capt. B. S. STEVENS, San Francisco.

To Fort Snelling, Minn., from Camp Fremont, Capt. P. RICE, Los Altos.

To Pittsburgh, Pa., from Fort Oglethorpe, Major P. M. THOMAS, San Francisco.

To Riverside, Calif., March Field, from Camp Kearney, Capt. G. H. HASTINGS, Los Angeles.

To San Francisco, Calif., Letterman General Hospital, from Camp Fremont, Capts. J. E. COLLORAN, Los Angeles; H. V. HOFFMAN, Lieut. F. J. BRESLIN, San Francisco. For instruction, from Vancouver Barracks, Major F. R. FAIRCHILD, Woodland.

The following orders have been revoked: *To Lakewood, N. J.,* for instruction, from Camp Crane, Lieut. A. H. CURRIE, Los Angeles. *To New Haven, Conn.,* Yale Army Laboratory School, from Hoboken, Lieut. T. L. ROGERS, Long Beach.

Canal Zone

To Camp McClellan, Ala., base hospital, from Camp Jackson, Major W. M. JAMES, Ancon.

Colorado

To Boston, Mass., from Camp Devens, Capt. C. G. McEACHERN, Denver.

To Camp Bowie, Texas, base hospital, from Fort Oglethorpe, Major H. S. FINNEY, Denver.

To Fort Des Moines, Iowa, from Fort Oglethorpe, Lieut. L. M. MAITLAND, Drake.

To report to the commanding general, Central Department, from Denver, Major F. H. McNAUGHT, Denver.

To San Diego, Calif., Rockwell Field, from Mineola, Capt. F. L. DENNIS, Colorado Springs.

The following order has been revoked: *To Camp Lee, Va.,* from Camp A. A. Humphreys, Lieut. A. H. PETERS, Colorado Springs.

Connecticut

To Camp Lee, Va., base hospital, from Williamsbridge, Capt. F. C. HYDE, Greenwich.

To Camp Upton, N. Y., from Fort Oglethorpe, Capt. J. D. GOLD, Bridgeport. Base hospital, from Camp Crane, Capt. J. B. SULLIVAN, New Haven.

To Camp Zachary Taylor, Ky., base hospital, from New Haven, Major J. S. SIMMONS.

To Fort McHenry, Md., from Hoboken, Capt. C. K. PETERSON, Lakeville.

To Hoboken, N. J., from Camp Sevier, Lieut. S. B. WELD, Hartford.

To report to the commanding general, Northeastern Department, from New Haven, Lieut. J. W. CHURCHMAN, New Haven.

To Walter Reed General Hospital, D. C., from Army Medical School, Capt. C. H. TURKINGTON, Litchfield.

District of Columbia

To Army Medical School, as commandant, from Surgeon-General's Office, Col. W. P. CHAMBERLAIN.

To Camp Jackson, S. C., base hospital, as commanding officer, from Southern Department, Col. A. H. WEBBER.

To Camp Knox, Ky., as sanitary inspector, from Camp Dix, Major J. S. HOUGH, Washington.

To Hoboken, N. J., from Surgeon-General's Office, Major H. N. KERNS.

To Rochester, Minn., Mayo Clinic, for instruction, from Washington, Lieut.-Col. E. C. McCULLOCH, Major C. L. BEAVEN.

To Walter Reed General Hospital, D. C., from Camp Gordon, Lieut. J. H. ALLEN, Washington; from Camp Meade, Major R. Y. SULLIVAN.

The following order has been revoked: *To New Haven, Conn.,* Yale Army Laboratory School, from Rockefeller Institute, Capt. F. A. HORNADAY, Washington.

Florida

To Boston, Mass., from Camp Sheridan, Capt. G. R. HOLDEN, Jacksonville.

To East Norfolk, Mass., from Surgeon-General's Office, Capt. R. E. BALDWIN, Tampa.

To Fort McPherson, Ga., from Camp Crane, Capt. D. FORSTER, Hawks Point.

To Richmond, Va., from New York City, Lieut. H. M. SMITH, Chattachooche.

Georgia

To Boston, Mass., from Camp Devens, Lieut. J. D. BLACKBURN, Atlanta.

To Camp Pike, Ark., base hospital, from Camp Crane, Major W. B. CRAWFORD, Savannah.

To Camp Sheridan, Ala., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Capt. W. R. DANCY, Savannah.

To Camp Wheeler, Ga., base hospital, for instruction, from Camp Crane, Capt. C. BARROW, Savanrah.

To Carlisle, Pa., from Fort Oglethorpe, Capt. L. W. CHILDS, Atlanta.

To Chicago, Ill., from Fort Oglethorpe, Capt. I. H. ADAMS, Macon.

To Fort Des Moines, Iowa, from Fort Oglethorpe, Capt. L. O. NICKELL, Macon.

To Fort McHenry, Md., from Fort Oglethorpe, Lieut R. L. JOHNSON, Waycross.

To Fort McPherson, Ga., from Camp Sheridan, Capt. H. J. ROSENBERG, Atlanta.

To Fort Totten, N. Y., from Camp Lee, Capt. W. K. SWANN, Monroe.

To Hoboken, N. J., from Fort Oglethorpe, Lieut P. H. CHRISTIAN, Columbus.

To Rochester, Minn., Mayo Clinic, for instruction, from Fort McPherson, Major W. T. WEISSINGER; from Fort Oglethorpe, Lieut.-Col. N. T. KIRK, Major C. L. GANDY.

To West Baden, Ind., from Camp Crane, Lieut. H. J. PEAVY, Jr., Byron; from Fort Oglethorpe, Capt. T. H. STEWART, Jr., Atlanta.

Idaho

To Fort Tilden, N. Y., from Syracuse, Lieut. C. W. WILLIAMS, Laclede.

To Hoboken, N. J., from Surgeon-General's Office, Capt. R. E. MASON, Mackay.

Illinois

To Arcadia, Fla., Dorr Field, from Rantoul, Major L. C. COLLINS, Chicago.

To Azalea, N. C., from Fort Screven, Capt. C. M. CHEADLE, Rockford.

To Biltmore, N. C., from Fort Oglethorpe, Capt. M. T. GOLDSTINE, Chicago.

To Boston, Mass., from Camp Crane, Lieut. L. C. BASSETT, Farina.

To Camp A. A. Humphreys, Va., to examine the command for cardiovascular diseases from Camp Sevier, Lieut. T. S. HUGGARD, Chicago.

To Camp Beauregard, La., from Camp McClellan, Major T. P. WARD, Mount Vernon. As tuberculosis examiner, from Camp Cody, Capt. E. S. GILLESPIE, Wenona. Base hospital, from Fort Oglethorpe, Capt. D. B. HAYDEN, Chicago. *To examine the command* for cardiovascular diseases, from Camp Sevier, Lieuts. C. J. McMULLEN, E. F. MIELKE, Chicago.

To Camp Bowie, Texas, from Camp Beauregard, Lieut. T. F. KUCERA, Chicago.

To Camp Crane, Pa., from Hoboken, Major D. B. POND, Chicago; Capt. G. B. BUSHEE, Arlington; Lieuts. I. W. STEINER, Harvey; G. P. GILL, Rockford.

To Camp Gordon, Ga., from Fort Oglethorpe, Lieut. E. W. WHITE, Chicago.

To Camp Grant, Ill., from Fort Oglethorpe, Lieuts. F. R. BUTTERFIELD, Z. J. LITTLE, Chicago. Base hospital, from Camp Crane, Major W. W. HAMBURGER, Chicago; from Fort Oglethorpe, Lieut. W. H. MILLER, Chicago.

To Camp Greene, N. C., base hospital, from Fort Oglethorpe, Lieut. W. B. McCLURE, Evanston.

To Camp Meigs, D. C., from Camp Lee, Capt. D. M. KEITH, Rockford.

To Camp Zachary Taylor, Ky., from Camp Crane, Lieut. T. W. HAGERTY, Chicago.

To Dansville, N. Y., from Camp Crane, Lieut. C. J. CHALLENGER, Chicago.

To Fort Benjamin Harrison, Ind., from Camp Lewis, Capt. J. H. GREGORY, Milford.

To Fort Des Moines, Iowa, for instruction, from Camp Crane, Capt. M. PFEFFENBERGER, Alton.

To Fort Leavenworth, Kan., from the Surgeon-General's Office, Major H. M. ADLER, Chicago.

To Fort Logan H. Roots, Ark., from Camp Hancock, Capt. J. H. EVANS, Chicago.

To Fort McHenry, Md., from Camp Crane, Lieut. G. H. WILSON, Mount Carmel; from Cape May, Lieut. E. A. SCHLAGETER, Chicago.

To Fort Riley, from Fort Oglethorpe, Lieut. J. H. MITCHELL, Chicago.

To Fort Sheridan, Ill., from Camp Grant, Capt. H. W. DUERINGER, Elgin; Lieut. H. L. DAY, Bluffs; from Camp Wadsworth, Major R. T. WOODYATT, Evanston; from Fort Oglethorpe, Capts. J. M. WASHBURN, Chicago; W. F. McNARY, East St. Louis; T. A. BRYAN, Mattoon; Lieuts. B. F. DAVIS, Chicago; from Newport News, Major R. L. MORRIS, Decatur. For instruction, from Camp Crane, Capts. F. W. BRIAN, Bloomington; F. A. NORRIS, Jacksonville; W. F. SCOTT, Melrose Park; J. B. MOORE, Zeigler.

To Lakewood, N. J., from Camp Crane, Capt. S. R. CATLIN, Rockford.

To Millington, Tenn., Park Field, as flight surgeon, from Mineola, Capt. F. E. BRAWLEY, Chicago.

To report to the commanding general, Central Department, from Chicago, Lieut.-Col. E. J. DOERING, Chicago.

To Richmond, Va., from Camp Greene, Capt. E. M. RUNDQUIST, Rockford, from Camp Hancock, Capt. H. A. WARE, Chicago.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Upton, N. Y.,* base hospital, for instruction, from Fort Oglethorpe, Lieut. J. C. R. WETTSTEIN, Effingham.

To Urbana, Ill., and on completion *to Fort Sheridan, Ill.,* from Camp Grant, Lieut. R. H. WOODS, La Salle.

To Walter Reed General Hospital, D. C., from Camp Grant, Lieut. W. H. MILLER, Chicago.

To Washington, D. C., from Philadelphia, Lieut.-Col. P. P. SCHUYLER DOANE, Chicago.

The following orders have been revoked: *To Camp Logan, Texas,* from Fort Oglethorpe, Lieut. J. G. BERKOWITZ, Chicago. *To Camp Sevier, S. C.,* base hospital, from Camp Travis, Lieut. W. K. REED, Chicago. *To Rockefeller Institute* for instruction in treatment of infected wounds, and on completion *to Camp Upton, N. Y.,* base hospital, for instruction, from Fort Oglethorpe, Capt. W. H. GALLAND, Chicago.

Indiana

To Camp Bowie, Texas, from Camp Cody, Capt. G. W. BOWMAN, Indianapolis.

To Camp Crane, Pa., from Hoboken, Lieut. C. E. JUMPER, Terre Haute.

To Camp Sevier, S. C., base hospital, from Fort Oglethorpe, Capt. O. E. FINK, Terre Haute.

To Camp Upton, N. Y., base hospital, for instruction, from Camp Crane, Capt. A. L. BRAMKAMP, Richmond.

To Camp Zachary Taylor, Ky., base hospital, from Fort Oglethorpe, Lieuts. J. W. CARMACK, Indianapolis, J. L. WILSON, South Bend.

To Edgewood, Md., as tuberculosis examiner, from Camp A. A. Humphreys, Lieut. J. J. GROSVENOR, Richmond.

To Fort Sheridan, Ill., from Camp Grant, Capt. E. A. STURM, Jasper.

To Lakewood, N. J., for instruction, from Camp Crane, Lieut. V. GORDON, Blountsville.

To Otisville, N. Y., from New Haven, Capt. W. A. McBRIDE.

To Walter Reed General Hospital, D. C., from Camp Meade, Capt. O. L. McCAY, Romney.

To Washington, D. C., Catholic University, from Army Medical School, Lieut. E. C. GARBER, Dunkirk.

To West Baden, Ind., from Camp Crane, Lieut. R. A. GILMORE, Michigan City; from Fort Oglethorpe, Capt. H. H. WHEELER, Indianapolis.

Iowa

To Camp Cody, N. M., base hospital, from Fort Oglethorpe, Lieut. J. E. REEDER, Sioux City.

To Camp Crane, Pa., from Hoboken, Lieut. M. O. BRUSH, Shenandoah.

To Camp Jackson, S. C., from Fort Oglethorpe, Capt. G. F. HARKNESS, Davenport.

To Fort Sheridan, Ill., from Camp Grant, Lieut. W. CORNS, Montone.

To Fort Snelling, Minn., from Camp Crane, Capt. H. E. MEYER, Hampton, Lieut. J. H. WOLFE, Iowa City.

To Lakewood, N. J., for instruction, from Fort Oglethorpe, Lieut. A. C. DAVIS, Iowa City.

Kansas

To Camp Bowie, Texas, from Camp Beauregard, Lieut. A. G. KOCH, Hutchinson.

To Camp Greene, N. C., base hospital, from Fort Oglethorpe, Major M. HAHN, Arkansas City.

To Fort McHenry, Md., from Camp Crane, Lieut. C. H. SMITH, Pittsburg.

To West Baden, Ind., from Fort Oglethorpe, Capt. E. D. EBRIGHT, Wichita.

Kentucky

To Azalea, N. C., from New Haven, Capt. D. P. CLAYPOOL, Waverly Hill.

To Biltmore, N. C., from Fort Oglethorpe, Capt. H. J. McKENNA, Louisville.

To Camp Abraham Eustis, Va., to examine the command for nervous and mental diseases, from Camp Zachary Taylor, Lieut. E. MOORMAN, Harned.

To Camp Greene, N. C., as tuberculosis examiner, from Camp A. A. Humphreys, Lieuts. W. T. LITTLE, Calvert City; G. M. WELLS, Glasgow.

To Camp Zachary Taylor, Ky., from Fort Oglethorpe, Capt. L. L. SMITH, Covington.

To Fort Snelling, Minn., from Camp Crane, Capt. L. KAHN, Louisville.

To report by wire to the commanding general, Central Department, from Bowling Green, Capt. P. E. BLACKERBY, Bowling Green.

To Walter Reed General Hospital, D. C., from Camp Colt, Lieut. G. L. THOMPSON, Lovelaceville.

Louisiana

To Biltmore, N. C., from Fo[illegible] W. H. HAMLEY, Lake Providence, Lieut. G. B. [illegible]

To Camp Sheridan, Ala., fr[illegible] t. R. D. MARTINEZ, Bunkie.

To Camp Travis, Texas, from Fort Oglethorpe, Lieut. H. B. SEEBOLD, New Orleans.

To report by wire to the commanding general, Southeastern Department, from Baton Rouge, Capt. C. McVEA, Baton Rouge, from New Orleans, Major I. DYER, New Orleans.

To Rochester, Minn., Mayo Clinic, for instruction, from Camp Beauregard, Major W. E. HALL.

Maine

To Camp Gordon, Ga., base hospital, from Camp Wadsworth, Major W. L. COUSINS, Portland.

To Camp Greene, N. C., base hospital, from Fort Oglethorpe, Capt. H. J. EVERETT, Portland.

To Chicago, Ill., from Fort Oglethorpe, Lieut.-Col. T. O. VANAMEE, Portland.

To Fort Benjamin Harrison, Ind., from Camp Sherman, Major F. E. LESLIE, Andover.

To Fort Des Moines, Iowa, from Fort Oglethorpe, Capt. W. B. MOULTON, Portland.

To Walter Reed General Hospital, D. C., for instruction, from Boston, Lieut. L. F. CARTER, Bradley.

Maryland

To Camp A. A. Humphreys, Va., from Fort Oglethorpe, Capt. R. H. FORD, Queenstown.

To Camp Cody, N. M., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Major H. R. CARTER, JR., Baltimore.

To Camp Logan, Texas, with the board examining the troops for cardiovascular diseases, from Camp Travis, Lieut. B. J. SANGER, Baltimore.

To Camp McClellan, Ala., from Fort Oglethorpe, Capt. J. S. WILLOCK, Roland Park.

To Camp Meade, Md., base hospital, from Camp Crane, Lieut. H. H. WARNER, Baltimore.

To Camp Shelby, Miss., to examine the troops for cardiovascular diseases, from Fort Oglethorpe, Major H. R. CARTER, JR., Baltimore.

To Fort Benjamin Harrison, Ind., as commanding officer, from Camp Meade, Lieut.-Col. E. KING.

To Fort McHenry, Md., from Fort Oglethorpe, Lieut. W. T. ANDERSON, Baltimore.

To Hoboken, N. J., from New Haven, Lieut. W. C. VON GLAHN, Baltimore.

To Perry, Ohio, from Camp Lee, Capt. P. L. TRAVERS, Easton.

To Pittsburgh, Pa., from Camp Meade, Lieut. B. B. BRUMBAUGH, Denton.

To Plattsburg Barracks, N. Y., from Fort Oglethorpe, Capt. M. LEVY, Baltimore.

To report to the commanding general, Eastern Department, from Baltimore, Capt. J. S. DAVIS, Baltimore.

To Rochester, Minn., Mayo Clinic, for instruction, from Fort McHenry, Lieut.-Col. L. J. OWEN.

Massachusetts

To Army Medical School, for instruction, from Fort Oglethorpe, Capt. D. S. LUCE, Canton, Lieuts. C. W. BRESSLER, L. H. ROCKWELL, Boston.

To Boston, Mass., from Fort Oglethorpe, Capt. F. G. BARNUM, Boston.

To Camp Crane, Pa., from Hoboken, Lieut. A. O. METIVIER, Springfield; Lieut.-Col. F. B. LUND, Boston. From Camp Wheeler, Capt. E. A. KNOWLTON, Holyoke.

To Camp Custer, Mich., base hospital, from Camp Crane, Capt. S. S. ORR, Weston.

To Camp Devens, Mass., to examine the troops for cardiovascular diseases, from Camp Crane, Lieut. F. C. HALL, Boston.

To Camp Greene, N. C., with the board examining troops for cardiovascular diseases, from Lakewood, Lieut. C. C. STURGIS, Boston.

To Camp Jackson, S. C., from Fort Oglethorpe, Capt. R. H. PECK, Springfield.

To Camp Lee, Va., from Fort Oglethorpe, Capt. H. F. MACLEOD, Boston.

To Camp Meade, Md., base hospital, from New Haven, Major H. L. CONNOR, Haverhill.

To Camp Meigs, D. C., to examine the command for nervous and mental diseases, from Camp Jackson, Lieut. M. W. PECK, Marblehead.

To Camp Upton, N. Y., from Fort Oglethorpe, Capt. E. C. SULLIVAN, Springfield. Base hospital, from Camp Crane, Lieut. C. W. STANSFIELD, Fall River.

To Camp Wadsworth, S. C., from Fort Oglethorpe, Lieut. T. B. DELANEY, Lowell.

To Camp Wheeler, Ga., from Camp Joseph E. Johnston, Lieut. C. BEARSE, Boston.

To Carlisle, Pa., from Camp Devens, Capt. R. A. GREENE, Palmer.

To Fort McHenry, Md., from Camp Greene, Capt. E. S. BAGNALL, Groveland, from Fort Oglethorpe, Lieut. J. DANE, Boston. For instruction, from Camp Crane, Capt. W. G. DROUIN, Holyoke; Lieuts. A. R. GARDNER, Lowell, W. A. BISHOP, North Abington.

To Fort Mott, N. J., from Camp Colt, Capt. E. S. LEWIS, Princeton.

To Hoboken, N. J., from Camp Crane, Lieut. E. E. SMITH, Webster.

To Richmond, Va., for instruction, from Camp Crane, Capt. E. A. KNOWLTON, Holyoke.

To Rockefeller Institute, for instruction in the treatment of infected wounds, and on completion, *to Camp Upton, N. Y.,* base hospital for instruction, from Fort Oglethorpe, Lieut. H. L. HIRSCH, Springfield.

To Walter Reed General Hospital, D. C., from Camp Greene, Lieut. A. H. GALVIN, Springfield.

To Williamsbridge, N. Y., from Camp Crane, Capt. J. H. WYMAN, Medway; from Hoboken, Capt. G. HARTMAN, Lynn.

The following orders have been revoked: *To Camp Abraham Eustis, Va.*, from Newport News, Lieut. W. W. MARSTON, Newton. *To Camp Upton, N. Y.*, from Eastern Department, Capt. W. H. ALLEN, Mansfield.

Michigan

To Americus, Ga., Souther Field, from Mount Clemens, Lieut. J. J. McCANN, Ionia.

To Biltmore, N. C., from Fort Oglethorpe, Capt. D. P. MAYHEW, Detroit.

To Boston, Mass., from Camp Crane, Major C. D. BROOKS, Detroit.

To Camp Crane, Pa., from Hoboken, Capt. R. K. YOUNG, Detroit.

To Camp Custer, Mich., from Fort Oglethorpe, Lieut. S. W. GREEN, Detroit.

To Camp Dix, N. J., base hospital, from Fort Oglethorpe, Capt. J. G. R. MANWARING, Flint.

To Camp Greene, N. C., as tuberculosis examiner, from Camp A. A. Humphreys, Lieut. A. W. SCHMIDT, Gay.

To Camp McClellan, Ala., base hospital, from Fort Oglethorpe, Lieut. R. G. JAMES, Detroit.

To Camp Meade, Md., from Fort Oglethorpe, Capt. H. W. PLAGGEMEYER, Detroit.

To Camp Meigs, D. C., to examine the command for nervous and mental diseases, from Camp Gordon, Capt. J. F. BERRY, Kalamazoo.

To Chicago, Ill., from Camp Dodge, Capt. J. G. CARR, Detroit.

To Fort Benjamin Harrison, Ind., for instruction, from Camp Crane, Lieut. E. M. CHAUNCEY, Albion.

To Fort Oglethorpe, from Belvidere, Ill., Lieut. S. A. STEALY, Charlotte.

To Fort Sheridan, Ill., from Camp Crane, Lieut. C. E. TRUESDELL, Detroit. For instruction, from Camp Crane, Capt. C. GEORGE, Jr., Ann Arbor.

To Fort Snelling, Minn., from Fort Oglethorpe, Lieut. L. H. TOWER, Battle Creek.

To Pittsburgh, Pa., from Camp Crane, Major W. H. MARSHALL, Flint.

To report to the commanding general, Northeastern Department, from Boston, Lieut. E. J. LYNCH, Detroit.

To Roland Park, Md., from Camp Crane, Lieut. L. G. CAMPBELL, Birmingham.

The following order has been revoked: *To Camp Crane, Pa.*, Major C. D. BROOKS, Detroit.

Minnesota

To Benbrook, Texas, Carruthers Field, from Fort Sill, Capt. G. T. AYRES, Ely.

To Camp Crane, Pa., from Hoboken, Capt. W. E. RICHARDSON, Slayton, Lieut. H. VAN DE ERVE, Minneapolis.

To Camp Dix, N. J., from Camp Crane, Capt. F. W. BRIGGS, Moorhead.

To Camp Dodge, Iowa, base hospital, from Camp Crane, Capt. A. W. HILGER, St. Paul.

To Camp Grant, Ill., base hospital, from Fort Sheridan, Capt. E. BOECKMANN, St. Paul. With the board examining the troops for cardiovascular diseases, from Camp Meade, Major L. L. TENBROECK, Minneapolis.

To Camp Sheridan, Ala., as tuberculosis examiner, from Camp Cody, Lieut. L. W. POLLOCK, Rochester.

To Camp Zachary Taylor, Ky., base hospital, from Fort Oglethorpe, Capt. H. L. ULRICH, Minneapolis, Lieut. B. RAVN, Windom.

To Chicago, Ill., for instruction, from Camp Grant, Capt. N. H. SCHELDRUP, Minneapolis, Lieuts. G. G. MOREHOUSE, Owatonna, J. M. ARNSON, St. Paul.

To Columbus Barracks, Ohio, Lieut. T. B. SMITH, Minneapolis.

To Fort McHenry, Md., from Cape May, Lieut. C. B. DRAKE, St. Paul.

To Fort Porter, N. Y., from Lake Charles, Lieut. A. D. CORNIEA, St. Paul.

To Fort Sheridan, Ill., from Camp Dodge, Capt. G. E. BENSON, Minneapolis.

To Fort Snelling, Minn., from Camp Crane, Major A. T. MANN, Minneapolis, Lieut. F. O. SWANSON, St. Paul; from Camp Gordon, Lieut. O. L. WINTER, St. Paul.

To Lakewood, N. J., from Camp Crane, Capt. R. J. E. ODEN, Minneapolis.

To report to the commanding general, Central Department, from Minneapolis, Capt. R. S. PERRY, Minneapolis.

To Walter Reed General Hospital, D. C., from Camp Crane, Major E. M. JONES, St. Paul.

To Washington, D. C., Surgeon-General's Office, from Camp Crane, Major C. H. KEENE, Minneapolis.

The following order has been revoked: *To Fort McPherson, Ga.*, from Fort Oglethorpe, Major H. M. MORTON, Minneapolis.

Missouri

To Camp Benning, Ga., from Fort Oglethorpe, Lieut. T. T. HOXSEY, St. Louis.

To Camp Bowie, Texas, from Camp Beauregard, Lieut. N. ZOGLIN, Kansas City.

To Camp Greene, N. C., base hospital, for instruction, from Camp Jackson, Capt. R. S. TILLES, St. Louis.

To Camp Kearney, Calif., base hospital, from *Camp Wadsworth, Capt.* L. A. KEMPFF, St. Louis.

To Camp Lee, Va., base hospital, from New Haven, Major D. L. HARRIS, St. Louis.

To Camp MacArthur, Texas, base hospital, from Camp Crane, Major J. H. OUTLAND, Kansas City.

To Camp Upton, N. Y., base hospital, for instruction, from Camp Crane, Capt. J. R. GREEN, Independence.

To Colonia, N. J., for instruction, from Camp Jackson, Lieut. R. F. HYLAND, St. Louis.

To Cooperstown, N. Y., from Dallas, Capt. A. L. LUDWIG, Kansas City.

To Fort Des Moines, Iowa, for instruction, from Camp Crane, Lieut. A. M. GREGG, Joplin.

To Fort McHenry, Md., for instruction, from Camp Crane, Capt. H. E. HAPPEL, St. Louis.

To Fort McPherson, Ga., from Fort Oglethorpe, Lieut. F. R. McDONALD, St. Joseph.

To Fort Sheridan, Ill., from Camp Grant, Lieut. J. L. LOUTZENHISER, Revanna.

To Fort Sill, Okla., Post Field, from Benbrook, Capt. N. W. SHARPE, St. Louis.

To Lakewood, N. J., for instruction, from Fort Oglethorpe, Lieut. H. A. ELKINS, Hardin, Lieut. J. L. SWARTS, St. Louis.

To report to the commanding general, Central Department, from Kansas City, Capt. J. G. HAYDEN, Kansas City; from St. Louis, Major W. H. LUEDDE, St. Louis.

The following orders have been revoked: *To Camp Crane, Pa.*, from Hoboken, Lieuts. H. B. PRYOP, Ashland; J. C. ROTTER, St. Louis.

Montana

To Camp Dodge, Iowa, from Fort Oglethorpe, Lieut. J. T. HOLMES, Polson.

To Camp Hancock, Ga., from Fort Oglethorpe, Capt. S. E. SCHWARTZ, Butte.

To Camp Zachary Taylor, Ky., base hospital, from Camp Crane, Capt. E. W. THUERER, Billings.

To Fort Snelling, Minn., from Camp Joseph E. Johnston, Lieut. E. S. PORTER, Moore.

The following order has been revoked: *To Camp Crane, Pa.*, from Hoboken, Capt. A. C. KNIGHT, Butte.

Nebraska

To Biltmore, N. C., from Fort Oglethorpe, Major F. J. WURTELE, North Platte.

To Camp Beauregard, La., to examine the command for nervous and mental diseases, from Camp Cody, Capt. H. R. CARSON, Norfolk.

To Fort Des Moines, Iowa, from Fort Oglethorpe, Lieut. W. H. CRUTCHER, Lincoln.

To Fort McHenry, Md., for instruction, from Camp Crane, Major S. R. HOPKINS, Hastings.

To Hoboken, N. J., from Camp Logan, Capt. P. A. ROYAL, Normal.

To report by wire to the commanding general, from Fort Oglethorpe, Lieut. C. H. SHEETS, Cozad.

To Williamsbridge, N. Y., from Camp Greene, Lieut. H. A. ROSENBAUM, Harvard.

New Hampshire

To Army Medical School, for instruction, from Fort Oglethorpe, Major R. J. GRAVES, Concord.

To Chicago, Ill., from Fort Oglethorpe, Major G. C. WILKINS, Manchester.

To Fort McPherson, Ga., from Camp Joseph E. Johnston, Capt. R. S. PERKINS, Exeter.

To Fort Totten, N. Y., from Camp Lee, Lieut. A. BORLAND, Meredith.

To Walter Reed General Hospital, D. C., from Camp Leach, Capt. E. C. DURGIN, East Andover.

The following orders have been revoked: *To Camp Crane, Pa.*, from Hoboken, Lieut. F. E. ROWE, Nashua.

New Jersey

To Boston, Mass., from Camp Crane, Major E. B. ROGERS, Collingwood.

To Camp Abraham Eustis, Va., base hospital, from Hoboken, Major L. O. TARLETON, Lieuts. J. E. BOLAND, C. W. CUMMINGS.

To Camp Crane, Pa., from Hoboken, Capt. J. H. ORAM, Paterson, Lieut. F. L. MARTINE, Newark.

To Camp Dix, N. J., base hospital, from Camp Crane, Lieut. G. S. LAIRD, Westfield; from Fort Oglethorpe, Lieut. W. P. DAVIS, Atlantic City. For instruction, from Camp Crane, Capt. M. A. SHANGLE, Elizabeth.

To Camp McClellan, Ala., base hospital, from Camp Greene, Lieut. P. S. STOUT, Jersey City.

To Camp Pike, Ark., from Fort Oglethorpe, Lieut. R. D. SWAIN, Newark.

To Carlisle, Pa., from Fort Riley, Lieut. A. L. L. BELL, Englewood.

To Chicago, Ill., from Fort Oglethorpe, Capt. E. ACKERMANN, Dover.

To Colonia, N. Y., from Fort Oglethorpe, Major H. D. CORBUSIER, Plainfield. For instruction, from Camp Jackson, Lieut. W. SPICKERS, Paterson.

To Garden City, N. Y., from Mineola, Lieut. E. EASTWOOD, High Bridge.

To Hoboken, N. J., from Camp MacArthur, Texas, Lieut. N. W. PINTO, Hoboken.

To Richmond, Va., from Fort Oglethorpe, Lieut. C. B. MAXSON, Jersey City.

To report to the commanding general, Eastern Department, from Atlantic City, Capt. J. J. G. WILLIAMS, Atlantic City.

To Walter Reed General Hospital, D. C., from Fort Oglethorpe, Capt. H. V. HUBBARD, Plainfield, Lieut. M. K. SMITH, *Morristown.*

To West Point, N. Y., from Hoboken, Lieut. F. C. TYNG.

New Mexico

To Camp Bowie, Texas, as assistant to the camp surgeon, from Camp Cody, Major R. E. PARRISH.

To Camp Crane, Pa., from Camp Cody, Capt. L. V. SMITH, Deming.

To Camp Jackson, S. C., as camp surgeon, from Camp Cody, Lieut.-Col. J. J. REDDY.

To Denver, Colo., from Camp Cody, Lieut. S. H. JAMES, Lordsburg.

To Fort Ontario, N. Y., for instruction, *from Camp Crane, Capt.* L. V. SMITH, Deming.

To report to the commanding general, Southern Department, from Fort Bayard, Major J. F. HAMMOND.

New York

To Army Medical School, for instruction, from Fort Oglethorpe, Lieut. H. C. MONTGOMERY, Watertown.

To Azalea, N. C., from New Haven, Capt. L. KARMIOHL, New York, Lieuts. W. G. HAYWARD, Jamestown, J. KRANER, New York.

To Biltmore, N. C., from Camp Crane, Capt. J. A. COX, Albany; from Camp Hancock, Capt. E. N. WILCOX, Pleasantville.

To Boston, Mass., from Camp Crane, Capt. A. H. TERRY, Jr., New York, Lieut. N. MILLS, Mount Vernon.

To Camp Abraham Eustis, Va., to examine the troops for cardiovascular diseases, from Lakewood, Lieut. R. A. CORBIN, New York.

To Camp Devens, Mass., from Walter Reed General Hospital, Capt. L. C. DUBOIS, Beacon. Base hospital, from Camp Crane, Major W. M. FORD, New York.

To Camp Dix, N. J., base hospital, from Rockefeller Institute, Lieut. F. W. BISHOP, New York.

To Camp Greene, N. C., base hospital, from Camp Crane, Capt. R. M. JONES, New York.

To Camp Lee, Va., as orthopedic surgeon, from Camp Sevier, Lieut. F. B. RING, Brooklyn. Base hospital, from Fort Oglethorpe, Lieut. H. L. SLOAN, New York.

To Camp Logan, Texas, for instruction, from Fort Oglethorpe, Capt. M. M. LUCID, Cortland.

To Camp Meade, Md., from Camp Crane, Lieut. J. M. McTIERNAN, New York.

To Camp Meigs, D. C., to examine the command for nervous and mental diseases, from Washington, Lieut. J. V. SWIERAT, Lancaster.

To Camp Pike, Ark., from Fort Oglethorpe, Lieut. G. J. MECCA, New York.

To Camp Sevier, S. C., from Fort Oglethorpe, Lieut. G. C. BARONE, Buffalo.

To Camp Sheridan, Ala., from Fort Oglethorpe, Lieut. A. F. CALVELLI, New York. As tuberculosis examiner, from Camp Shelby, Lieut. H. M. SPOFFORD, Batavia.

To Camp Sherman, Ohio, base hospital, from Camp Crane, Lieut. R. W. MORIARTY, New York.

To Camp Upton, N. Y., from Fort Ethan Allen, Capt. F. W. SEYMOUR, Rochester. Base hospital, from New Haven, Capt. R. A. LAMBERT, New York. Base hospital, for instruction, from Camp Crane, Lieut. S. S. FRIEDMAN, New York.

To Camp Wadsworth, S. C., base hospital, from Fort Oglethorpe, Lieut. E. LEVY, New York.

To Camp Wheeler, Ga., from Camp Joseph E. Johnston, Lieut. G. E. BLUE, New York.

To Camp Zachary Taylor, Ky., base hospital, from Camp Crane, Lieut. H. J. WILSON, New York.

To Cape May, N. J., for instruction, from Camp Custer, Capt. J. HORNI, Brooklyn.

To Chicago, Ill., from Camp McClellan, Major C. J. HUNT, Clifton Springs.

To Colonia, N. J., from Fort Oglethorpe, Capt. T. D. BUCK, Rochester, Lieut. E. M. STERN, New York; from Lakewood, Lieut. W. W. LASHER, New York.

To East View, N. Y., for instruction, from Camp Custer, Capt. E. M. ARMSTRONG, New York.

To Edgewood, Md., to examine the command for nervous and mental diseases, from Washington, Lieut. H. C. BURGESS, Canadaigua.

To Fort Benjamin Harrison, Ind., from Camp Lee, Lieut. F. D. ZEMAN, Brooklyn; from Williamsbridge, Major D. D. ROBERTS, Brooklyn, Capt. C. C. CORYELL, New York.

To Fort Des Moines, Iowa, from Walter Reed General Hospital, Lieut. H. L. PRINCE, Rochester.

To Fort McHenry, Md., from Fort Oglethorpe, Capt. L. W. CALLAN, New York.

To Fort McPherson, Ga., from Camp Crane, Lieut. J. L. KINNER, Elmira; from Fort Oglethorpe, Lieut. C. A. HARGITT, Brooklyn.

To Fort Sheridan, Ill., from Camp Crane, Lieut. H. M. THOMAS, New York. For instruction, from Camp Crane, Capt. A. H. RODGERS, Corning.

To Garden City, N. Y., from Mineola, Lieut. F. B. MAGUIRE, Albany.

To Hoboken, N. J., from Camp Greene, Lieut. B. P. BROWN, *Brooklyn*; from Camp Lee, Major T. DARLINGTON, New York; from Camp McClellan, Lieut. H. W. KEMP, Brooklyn.

To Hot Springs, Ark., from Fort Oglethorpe, Capt. B. J. BECK, New York.

To Houston, Texas, Ellington Field, from Mineola, Lieut. G. BERGER, Port Chester.

To Lakewood, N. J., from New Haven, Lieut. H. T. HYMAN, New York. For instruction, from Camp Jackson, Major J. P. F. BURKE, Buffalo; from Fort Oglethorpe, Lieuts. R. G. BLOOD, A. C. HERRING, New York.

To Mineola, N. Y., Hazelhurst Field, from Princeton, Lieut. P. B. JENKINS, New York.

To Newport News, Va., from New Haven, Lieut. E. KELLERT, Albany.

To Otisville, N. Y., from New Haven, Capt. P. McPARTON, Schenectady.

To Plattsburg Barracks, N. Y., from Fort Oglethorpe, Lieut. T. HALPERN, New York.

To report by wire to the commanding general, Eastern Department, from Newark, Major J. MacDONALD, Jr., *New York*; from New York, Major J. F. FRASER, New York; from Philadelphia, Capt. A. S. MADDOX, New York.

To Richmond, Va., from Fort Oglethorpe, Major P. W. NATHAN, New York.

To Rockefeller Institute, from New York, Capt. T. F. X. SULLIVAN, New York. For instruction, from Camp Zachary Taylor, Lieut. F. L. GATES, New York.

To San Antonio, Texas, Kelly Field, as flight surgeon, from Hicks, Texas, Capt. G. M. CLOWE, Schenectady.

To San Francisco, Calif., Letterman General Hospital, from Camp Crane, Lieut. A. E. GORDIN, New York.

To Walter Reed General Hospital, D. C., from Fort Oglethorpe, Lieut. W. O. HILL, Buffalo; from *Fort Sheridan*, Capt. C. P. HUTCHINS, New York; from New York, Lieut. M. KOHLENBERG, Brooklyn.

To West Baden, Ind., from Fort Oglethorpe, Capt. P. W. ROBERTS, New York; Lieut. H. BLAUVELT, Brooklyn.

To Williamsbridge, N. Y., for instruction, from Camp Crane, Capt. E. A. KING, New York.

To the retired list, from Ithaca, Major J. R. HARRIS.

The following orders have been revoked: *To Camp Crane, Pa.*, base hospital, from Camp Sevier, Capt. W. E. BOWEN, Rochester; from Fort Douglas, Lieut. G. N. BANCKER, New York. *To Camp Grant*, as assistant to camp surgeon, from Army War College, Major T. F. PATTERSON, Brooklyn. *To Camp Meade, Md.*, base hospital, from Camp Crane, Capt. H. W. JACKSON, New York. *To Fort Riley*, base hospital, from Fort Oglethorpe, Capt. A. S. RULAND, Syracuse. *To Houston, Texas*, Ellington Field, from Princeton, Lieut. P. B. JENKINS, New York. *To Philadelphia, Pa.*, from Eastern Department, Capt. A. S. MADDOX, New York. *To Williamsbridge, N. Y.*, from Walter Reed General Hospital, Lieut. S. DANZER, Brooklyn.

North Carolina

To Otisville, N. Y., from New Haven, Lieut. J. W. WILLCOX, Laurel Hill.

To Waynesville, N. C., from Fort Oglethorpe, Lieut. J. H. ROZZELLE, Salisbury.

North Dakota

To Chicago, Ill., for instruction, from Camp Grant, Capt. R. R. HOGUE, Linton.

To West Baden, Ind., from Fort Oglethorpe, Major W. A. GERRISH, Jamestown.

Ohio

To Army Medical School, from Washington, Lieut. I. B. SMOCK, Canton.

To Boston, Mass., from Camp Crane, Major A. H. SMITH, Marietta; from Fort Oglethorpe, Capt. H. B. DORNBLASER, Springfield.

To Camp Greene, N. C., from Camp Crane, Capt. H. B. BLAKEY, Columbus.

To Camp Logan, Texas, for instruction, from Fort Oglethorpe, Lieut. L. F. LAUFERSWEILER, Columbus.

To Camp MacArthur, Texas, with the board examining the troops for cardiovascular diseases, from Camp Pike, Lieut. C. H. CHASE, Cleveland.

To Camp Sherman, Ohio, from Fort Oglethorpe, Lieut. R. R. BOND, Dayton.

To Carlisle, Pa., from Fort Oglethorpe, Lieut. D. M. SKINNER, Hamilton.

To Colonia, N. J., from Walter Reed General Hospital, Lieut. E. J. ROSE, Gallipolis.

To Dansville, N. Y., from Camp Lee, Lieut. G. A. ROWLAND, Columbus.

To Fort DuPont, Del., from Camp Holabird, Lieut. R. A. ELLIOTT, Alger.

To Fort Logan H. Roots, Ark., from Fort Oglethorpe, Lieut. P. G. SMITH, Cincinnati.

To Fort Michie, N. Y., from Camp Lee, Lieut. T. H. LAUTENSCHLAGER, Youngstown.

To Fort Sheridan, Ill., from Camp Grant, Lieut. C. H. HEFFRON, Metamora; from Fort Oglethorpe, Lieut. R. E. STEPFIELD, Barbertown.

To Fort Snelling, Minn., from Fort Oglethorpe, Lieut. R. K. FINLEY, Xenia.

To Lakewood, N. J., for instruction, from Camp Jackson, Capt. D. W. PALMER, Cincinnati.

To Madison Barracks, N. Y., from Camp Hancock, Major H. M. OSBORNE, Youngstown.

To report to the commanding general, Central Department, from Cleveland, Lieut. C. A. BOWERS, Cleveland.

To Walter Reed General Hospital, D. C., for instruction, from Boston, Capt. J. R. TILLOTSON, Delphos; *from* Fort Oglethorpe, Capt. R. L. CAMERON, Youngstown, Lieut. L. E. PHIPPS, Youngstown; from Newport News, Lieut. E. J. ROSE, Gallipolis.

To Williamsbridge, N. Y., from Hoboken, Lieut. W. L. LATHROP, Metamora.

The following order has been revoked: *To West Baden, Ind.*, from Camp Crane, Capt. W. F. LAUTERBACH, Dayton.

Oklahoma

To Boston, Mass., from Camp Crane, Capt. M. RODGERS, Clinton.

To Camp Sheridan, Ala., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Capt. O. HOVENDEN, El Reno.

To Fort Sam Houston, Texas, base hospital, from Camp Cody, Capt. G. H. APPLEWHITE, Shawnee.

To Fort Sheridan, Ill., from Camp Grant, Lieut. J. ASHLEY, Fletcher.

To report to the commanding general, Southern Department, from Fort Reno, Lieut. W. W. D. AKERS, Tyrone.

The following orders have been revoked: *To Camp Sevier, S. C.*, base hospital, from Camp Joseph E. Johnston, Capt. B. LOVELADY, Guthrie; Lieut. V. C. TISDAL, Elk City.

Oregon

To Boston, Mass., from Camp Crane, Capt. E. A. SOMMER, Portland.

To Camp Lewis, Wash., base hospital, for instruction, from Camp Crane, Lieut. G. L. BOYDEN, Pendleton.

To Camp Wadsworth, S. C., base hospital, from Camp Crane, Capt. C. E. SEARS, Portland.

To Fort Snelling, Minn., from Hoboken, Capt. C. J. McCUSKER, Portland.

To Lakewood, N. J., from Camp Crane, Capt. J. F. WOOD, Portland.

To report to the commanding general, Philippine Department, from Camp Meade, Major E. C. DALTON, *Portland*.

To Walter Reed General Hospital, D. C., from Camp Fremont, Capt. S. H. SHELDON, Portland.

Pennsylvania

To Azalea, N. C., from Camp Crane, Capt. J. B. McMURRAY, Washington.

To Camp Abraham Eustis, Va., base hospital, from Hoboken, Lieut. H. P. BLAKE, Walston.

To Camp Bowie, Texas, as tuberculosis examiner, from Camp Cody, Lieut. U. H. REIDT, Jeannette. *To examine the troops* for cardiovascular diseases, from Camp Travis, Lieut. W. D. STROUD, Philadelphia.

To Camp Crane, Pa., from Hoboken, Capt. H. T. SMITH, St. Peters.

To Camp Custer, Mich., *to examine the troops* for cardiovascular diseases, from Camp Crane, Capt. J. G. TAYLOR, Tunkhannock.

To Camp Gordon, Ga., from Fort Oglethorpe, Lieut. C. F. LEONARD, Philadelphia.

To Camp Greene, N. C., from Fort Oglethorpe, Lieut. D. H. EDWARDS, Washington.

To Camp Jackson, S. C., for instruction, from Fort Oglethorpe, Capt. J. HEMPHILL, Jr., West Chester.

To Camp Lee, Va., base hospital, from Fort Oglethorpe, Lieut. E. P. LONGAKER, Philadelphia.

To Camp Sheridan, Ala., base *hospital*, from Camp Wheeler, Capt. R. F. RIDPATH, Philadelphia.

To Camp Upton, N. Y., base hospital, for instruction, from Camp Crane, Capt. W. L. CAMPBELL, New Castle.

To Camp Wheeler, Ga., base hospital, from Camp Crane, Capt. C. B. NOFCKER, Scranton.

To Camp Zachary Taylor, Ky., base hospital, from Fort Oglethorpe, Lieuts. W. E. CAMPBELL, Sharon; H. C. GRIM, Trumbaursville.

To Cape May, N. J., from Fort McHenry, Capt. G. H. CROSS, Chester.

To Colonia, N. J., from Fort Oglethorpe, Capt. W. C. BRYANT, Pittsburgh; from Fort Slocum, Capt. C. N. SILMAN, Pittsburgh.

To Dansville, N. Y., from Fort Oglethorpe, Lieut. J. P. BOYLE, Philadelphia.

To Detroit, Mich., from Fort Oglethorpe, Capt. A. R. MATHENY, Pittsburgh.

To Edgewood, Md., to examine the command for nervous and mental diseases, from Washington, Lieut. T. F. ERDMAN, Reading.

To Fort Benjamin Harrison, Ind., from Fort Oglethorpe, Major R. E. BRENNEMAN, Pittsburgh.

To Fort McHenry, Md., from Camp Crane, Major E. H. GOODMAN, Philadelphia; from Camp Meade, Capt. W. T. ELLIS, Philadelphia; from Fort Oglethorpe, Lieut. H. L. SHAFFER, Pittsburgh.

To Fort McPherson, Ga., from Camp Crane, Capt. J. R. COWAN, Danville.

To Fort Ontario, N. Y., from Fort Oglethorpe, Capt. W. B. SMALL, Philadelphia.

To Fort Sheridan, Ill., from Camp Grant, Capt S. J. REPPLIER, Philadelphia.

To Fort Terry, N. Y., from Camp Lee, Lieut. E. RANDALL, Jr., Philadelphia.

To Fort Washington, Md., from Camp Lee, Capt. C. I. WENDT, Pittsburgh.

To Hoboken, N. J., from Camp Logan, Lieut. G. A. PARKER, South Bethlehem. From Fort Slocum, Lieut. P. B. MEANS, Philadelphia.

To Lakewood, N. J., from Camp Crane, Major C. H. HENNINGER, Pittsburgh; Capt. A. E. THOMPSON, Washington. For instruction, from Fort Oglethorpe, Lieut. J. L. ARNOLD, Harrisburg.

To Newport News, Va., from Camp Sherman, Major B. F. DUCKWALL, Pittsburgh.

To Pittsburgh, Pa., from Fort Oglethorpe, Lieuts. J. D. KISTLER, Pittsburgh; G. E. CRAMER, Sharpsburg.

To Richmond, Va., from Camp Greene, Major S. C. BURNS, Philadelphia.

To Rochester, Minn., Mayo Clinic, *for instruction, from Camp Crane*, Capt. A. W. SMITH.

To Washington, D. C., Surgeon-General's Office, from Camp Zachary Taylor, Major J. H. Austin, Ardmore; from Fort Oglethorpe, Lieut.-Col. E. MARTIN, Philadelphia.

To West Baden, Ind., from Camp Crane, Lieut. B. F. FULTON, Pittsburgh; for instruction, from Camp Jackson, Capt. F. S. MORRIS, Pittsburgh.

To report to the commanding general, Eastern Department, from Philadelphia, Capt. J. W. WEST, Philadelphia; from Schenectady, Lieut. J. E. MOORE, Carnegie.

The following orders have been revoked: *To Rockefeller Institute*, for instruction in the treatment of infected wounds, and on completion *to Camp Dix, N. J.*, base hospital, from Fort Oglethorpe, Capt. E. M. COWELL, Athens. *To Camp Sevier, S. C.*, base hospital, from Camp Joseph E. Johnston, Lieut. T. B. HERRON, Monesson.

Rhode Island

To Azalea, N. C., from Fort Oglethorpe, Major G. W. GARDNER, Providence.

To Camp Sevier, S. C., base hospital, from Camp Crane, Capt. C. E. HAWKES, Providence.

To Fort McHenry, Md., from Fort Oglethorpe, Capt. E. W. BURT, Providence.

South Carolina

To Azalea, N. C., from New Haven, Major J. D. McDOWELL, York.

To Camp Beauregard, La., with the board examining the troops for cardiovascular diseases, from Camp Jackson, Major W. WESTON, Columbia.

To Camp Sevier, S. C., from Camp Wadsworth, Lieut. R. CATHCART, Charleston.

To Camp Wadsworth, S. C., from Fort Oglethorpe, Major C. B. EARLE, Greenville.

To Fort Snelling, Minn., from Fort Oglethorpe, Lieut. F. D. GILLIS, Mitchell.

To Newport News, Va., and thence *to Charleston, S. C.*, from Camp Sevier, Col. P. C. FAUNTLEROY.

South Dakota

To Lakewood, N. J., for instruction, from Camp Crane, Lieut. T. J. DEVEREAUX, Aberdeen.

Tennessee

To Camp Dodge, Iowa, to examine the troops for cardiovascular diseases, from Camp Zachary Taylor, Lieut. I. O. PARK, Union City.

To Camp Meade, Md., for instruction, from Fort Oglethorpe, Lieut. E. M. DELAY, Chattanooga.

To Camp Sheridan, Ala., as tuberculosis examiner, from Camp Cody, Capt. F. B. BREWER, Nashville.

To Detroit, Mich., for instruction, from Camp Jackson, Capt. E. D. MITCHELL, Memphis.

To Fort Des Moines, Iowa, for instruction, from Camp Crane, Lieut. O. W. ROGERS, Knoxville.

To report to the commanding general, Southeastern Department, from Fort Logan H. Roots, Lieut. W. H. NILES, Tellico Plains.

The following orders have been revoked: *To Camp Crane, Pa.*, from Hoboken, Lieut. L. E. TRENT, Nashville. *To Rockefeller Institute*, for instruction in the treatment of infected wounds, and on completion *to Camp Dix, N. J.*, base hospital, *for instruction*, from Fort Oglethorpe, Lieut. B. L. JACOBS, Chattanooga.

Texas

To Camp Abraham Eustis, Va., base hospital, from Hoboken, Lieut. E. H. INMON, Tahoka.

To Camp Bowie, Texas, from Fort Oglethorpe, Capt. K. V. KIBBIE, Fort Worth. As tuberculosis examiner, from Camp Cody, Lieut. W. E. CAMPBELL, Cedar Creek. Base hospital, from Camp Shelby, Lieut. C. H. BROOKS, Waco. Base hospital, for instruction, from Camp Crane, Capts. D. A. MANN, Beaumont; I. A. WITHERS, Fort Worth; A. M. McELHANNON, Sherman.

To Camp Crane, Pa., from Hoboken, Lieut. H. T. SMITH, Dallas.

To Camp Joseph E. Johnston, Fla., base hospital, for instruction, from Camp Custer, Major G. HAMILTON, Houston.

To Camp Logan, Texas, base hospital, *from Fort Oglethorpe*, Capt. A. P. HOWARD, Houston; Lieut. W. TRAYLOR, San Antonio.

To Camp MacArthur, Texas, Lieut. A. J. STREIT, Marlin.

To Camp Meade, Md., from Camp Kendrick, Capt. A. W. C. BERGFELD, Sequin.

To Camp Sheridan, Ala., base hospital, from Camp Crane, Capt. H. M. LANHAM, Waco.

To Fort Des Moines, Iowa, from Fort Oglethorpe, Capt. W. C. DURINGER, Fort Worth.

To Fort Ontario, N. Y., from Camp Crane, Lieut. I. E. COLGIN, Waco.

To Fort Sheridan, Ill., from Fort Oglethorpe, Lieut. R. M. FRANCHER, Houston.

To Garden City, N. Y., from Mineola, Lieuts. A. J. POLLARD, Alvin; B. C. SMITH, Brandon.

To Urbana, Ill., and on completion *to Fort Sheridan, Ill.*, from Camp Grant, Lieut. S. J. PATE, Beaumont.

To Walter Reed General Hospital, D. C., for instruction, from Boston, Lieut. H. SHANNON, Dallas; from Camp Meade, Lieut. J. CAMP, Pecos.

The following orders have been revoked: *To Camp Jackson, S. C., from Atlanta, Capt.* E. C. FOSTER, Whitt. *To Camp Meade, Md.*, from Camp Colt, Lieut. O. H. TALLEY, El Paso.

Utah

To Camp Sevier, S. C., from Fort Oglethorpe, Lieut. G. A. LIGHT, Salt Lake City.

Vermont

To Edgewood, Md., to examine the command for nervous and mental diseases, from Camp Humphreys, Capt. S. L. GOODRICH, Waterbury.

Virginia

To Biltmore, N. C., for instruction, from Camp Jackson, Capt. J. T. BUXTON, Newport News.

To Chicago, Ill., from the Surgeon-General's Office, Capt. L. M. ALLEN, Gaylord.

To Dansville, N. Y., from Camp Wadsworth, Lieut. G. G. HANKINS, Phoebus.

To Fort Sill, Okla., base hospital, from Camp Cody, Capt. L. N. HARRIS, Harrisonburg.

The following order has been revoked: *To Fort Adams, R. I.*, from Fort Oglethorpe, Lieut. W. H. REMINE, Lodi.

Washington

To Camp Lewis, Wash., from Camp Crane, Lieut. L. S. DEWEY, Okanogan.

To Houston, Texas, from Fort Oglethorpe, Capt. W. M. KARSHNER, Puyallup.

The following order has been revoked: *To Camp Lewis, Wash.*, Lieut. L. D. LONG, Seattle.

West Virginia

To Boston, Mass., from Camp Crane, Capt. W. S. FULTON, Wheeling.

To Camp Crane, Pa., from Camp Beauregard, Lieut. R. U. DRINKARD, Wheeling; from Hoboken. Lieut. H. H. ESKER, Clarksburg.

To Camp Gordon, Ga., base hospital, from Camp Sheridan, Capt. H. H. YOUNG, Charleston.

To Camp Lee, Va., from Hoboken, Capt. E. A. HILDRETH, Wheeling.

To Fort Des Moines, Iowa, from Walter Reed General Hospital, Capt. C. A. BARLOW, Beverly.

To Fort Sheridan, Ill., from Camp Crane, Major J. E. CANNADAY, Charleston.

To Garden City, N. Y., from Pittsburgh, Major W. T. OWENS, Clarksburg.

To Richmond, Va., for instruction, from Camp Crane, Lieut. R. U. DRINKARD, Wheeling.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Camp Dix, N. J.*, base hospital, for instruction, from Fort Oglethorpe, Capt. W. E. GRIM, Cameron.

Wisconsin

To Biltmore, N. C., from Camp Wadsworth, Capt. A. O. SANDERS, Superior.

To Camp Custer, Mich., from Fort Oglethorpe, Capt. A. De PIERRE, Green Bay.

To Camp Jackson, S. C., base hospital, *from Camp Joseph E. Johnston*, Capt. S. G. PAKE, Hayward.

To Detroit, Mich., from Fort Oglethorpe, Capt. V. F. MARSHALL, Appleton.

To Fort Sheridan, Ill., from Fort Oglethorpe, Lieut. J. F. McNARY, Milwaukee.

To Lakewood, N. J., from Camp Crane, Capt. P. A. FOX, Milwaukee; from Fort Oglethorpe, Capt. C. W. GIESEN, Superior; Lieut. V. J. JACOBSOHN, La Crosse.

To Mineola, N. Y., from Garden City, Capt. E. J. ROLLEFSON, Superior.

To report by wire to the commanding general, Central Department, from Madison, Wis., Lieut. V. C. JACOBSON, La Crosse; from Milwaukee, Capt. J. D. MADISON, Milwaukee.

The following order has been revoked: *To Rockefeller Institute*, for instruction in the treatment of infected wounds, and on completion *to Camp Wadsworth, S. C.*, base hospital, for instruction, from Fort Oglethorpe, Capt. R. W. JONES, Wausau.

Wyoming

To Garden City, N. Y., from Mineola, Lieut. E. R. VAN COTT, Diamondville.

ORDERS TO OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Passed Asst. Surg. F. A. CARMELIA, proceed to Columbus, Ohio, and Wheeling and Charleston, W. Va., for conference concerning the influenza situation.

Asst. Surg. R. P. SANDIDGE, proceed to necessary places in the state of Virginia for duty in connection with extracantonment sanitation.

Asst. Surg. R. W. HART, proceed to Stapleton, N. Y., for duty at the Marine Hospital.

Acting Asst. Surg. R. E. GRAMLING, proceed to necessary places in Kansas, including Topeka and Kansas City, for conference relative to venereal disease control.

Acting Asst. Surg. PARK HOWELL, proceed to Pensacola, Florida Quarantine Station for temporary duty.

Acting Asst. Surg. J. I. WHITTENBERG, proceed to Lexington and other places in the state of Kentucky for duty in the influenza control.

Constructing Engineer N. V. PERRY, proceed to Dawson Springs, Ky., to inspect certain property tendered for hospital uses.

Sanitary Engineer L. C. FRANK, proceed to Jackson, Miss., to attend conference of state health officers.

Sanitary Engineer H. W. STREETER, proceed to Baltimore, Md., for duty in epidemiological studies in influenza.

Scien. Asst. G. H. DECELL, proceed to Baltimore, Md., to collect data relative to the epidemiology of influenza.

Scien. Asst. W. L. WOOD, relieved at Alexandria, Va., proceed to Philadelphia, Pa., for duty in shipyard sanitation at Chester, Pa.

Chemist OLIVER H. SCHUNK, proceed to Milwaukee, Wis., to investigate pollution by industrial waste of the city water supply.

Chief Sanitary Inspector A. C. SHAW, proceed to Columbus, Ga., to study the milk and dairy situation in extracantonment zones.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARIZONA

New County Officers.—The Maricopa County Medical Society at its annual meeting in Phoenix elected the following officers: president, Dr. Robert R. Brownfield; vice president, Dr. Harlan P. Mills; secretary, Dr. Kimball Bannister, and treasurer, Dr. Henry T. Bailey, all of Phoenix.

COLORADO

Medical Veterans of the World's War.—Officers and members of the Medical Corps of the United States Army, and of the Federal Draft and Advisory Boards met at the capitol, Denver, at the call of Capt. Horace G. Wetherill, M. C., U. S. Army, medical aide to the governor, to take preliminary steps toward the organization of the Colorado unit of the Medical Veterans of the World's War. Members of nineteen medical advisory boards, of seventy local boards of the several counties and of two district boards, in all about 600, are eligible to membership. Captain Wetherill presided and was instructed to appoint a committee on permanent organization.

ILLINOIS

Palmer to Move Office.—Dr. George T. Palmer, assistant director of the state department of public health and president of the Illinois State Tuberculosis Association, expects to move his office from Chicago to Springfield, by January 1.

Fire at Camp Grant.—Fire of unknown origin at Camp Grant, Rockford, is said to have destroyed the building occupied by the medical examination board handling discharge examination work, and it is said that 6,000 qualification cards and records of examination were lost.

District Society Meeting.—At the annual meeting of the North Central Illinois Medical Association held in Dixon, December 10, Dr. Otho B. Will, Peoria, was elected president, Dr. John C. White, Seatonville, vice president, and Dr. George A. Dicus, Streator, was reelected secretary-treasurer.

Chicago

Fire at State Hospital.—A fire at the Dunning State Hospital, December 11, did great damage to the tuberculosis building, a one-story frame structure, from which 400 patients were removed, many of them ill with influenza. No casualties occurred.

Special Number.—In celebration of the meeting of the American Public Health Association in Chicago during the week of December 9, the city department of health issued a special number of the *Bulletin of the Chicago School of Sanitary Instruction.* This bulletin gives details of the organization of the health department, together with a description and statistics of the activities of the various divisions and bureaus, including special investigations conducted by the department in 1917 and 1918.

Dudley Leaves Active Faculty.—Dr. Emilius C. Dudley, after thirty-seven years as professor of gynecology at Chicago Medical College and Northwestern University, Medical School, has retired from the faculty and has been made emeritus professor of gynecology. In commemoration of his long and faithful work for the school, the faculty gave a dinner in his honor, December 12, at which Dr. Archibald Church, Chicago, presided and at which addresses laudatory of Dr. Dudley were made by President Holgate of the Northwestern University, Dr. E. Quine, Dean Arthur I. Kendall, Major Samuel C. Stanton and Lieut.-Col. Nathan William McChesney.

KENTUCKY

State Aid to Visiting Nurses.—The state has a law enacted in 1918 providing that from any funds in the treasury not otherwise appropriated the state board of health may appropriate to any county, tuberculosis district commission, or other public welfare organization, a sum not to exceed $25 a month to pay the state's part of the salary of a visiting nurse employed under the act. Such nurses have been made a part of the health system of the state under a rule of the state board made on the advice of the attorney-general for the purpose of making legal the payments named.

Every Physician a State Health Officer.—Recognizing that the weak point in public health organization is the failure to secure and act promptly on reports of contagious or infectious diseases, the state board of health has endeavored to remedy this situation by making every physician in the state holding a certificate to practice medicine or other system of healing a permanent sanitary inspector of the board. A certificate is issued to such persons giving authority and instructions to isolate all cases of influenza or other communicable diseases for a period of ten days after recovery, and all cases suspected as such until it is known that it is not a communicable disease. They are required to report all cases of such disease to the county or city health officer within twenty-four hours. Delay in reporting or in taking proper action in regard to such infectious cases has been a handicap in all epidemic work, and has proved especially disastrous in the prevailing epidemic of influenza.

LOUISIANA

Mrs. Matas Dies.—Mrs. Adrienne Matas, partner in all professional labors and activities of Dr. Rudolph Matas, New Orleans, died December 10, from pneumonia following influenza. She regularly accompanied her husband to the meetings of the American Medical Association. For several years she had been an invalid, suffering with nephritis, and for the last five months, angina pectoris.

Vital Statistics of the State.—Louisiana has at last been placed in the registration area of the United States by the census bureau, so far as statistics of deaths are concerned. To obtain this recognition it is necessary that at least 90 per cent. of all deaths shall be reported. Louisiana is the fifth Southern state to be admitted, and the first in the Southwest to qualify.

Health Board Activities.—Dr. Oscar Dowling, Shreveport, president of the state board of health, has issued a formal statement setting forth the importance of the "Come Clean" campaign in which he is now engaged for the abolishment of diseases arising from social vice. The campaign is now an antivice crusade by a crusade against venereal disease. It is being conducted by the state board of health under orders of the United State Public Health Service, and its details are first, to clean up and enforce all repressive measures, second, to establish medical work in clinics and detention homes, third, to instruct the public through pamphlets, exhibits and literature, and fourth, to provide wholesome recreation, attractive lounging places, organized sports, reading rooms, and other good amusements.——Dr. Oscar Dowling has just returned from a two weeks' trip through the state undertaken in an effort to establish at various points a series of laboratories where physicians may be assisted in making quick and active diagnosis. The tentative points for laboratories are Shreveport, Monroe and Baton Rouge, and one will probably be established in the southwestern part of the state.

MARYLAND

New Officers.—At the meeting of the Baltimore City Medical Society, December 6, the following officers were elected: president, Dr. Guy L. Hunner; vice president, Dr. Harvey G. Beck; secretary, Dr. Emil Novak, and treasurer, Dr. William S. Gardner, all of Baltimore.

Personal.—Lieut. Alexander J. Gillis, Baltimore, has been awarded the British Military Cross. Lieutenant Gillis is confined to a hospital at Wandsworth, London, recovering from shell wounds in his side, received while on duty with the British Expeditionary Forces.

Fresh Outbreak of Influenza.—The increase in the number of new cases of influenza being reported to the health department has led the Advertising Club to request Health Commissioner John D. Blake to take immediate steps to prevent another epidemic. The health department is prepared to act should it become necessary to do so, but at the present time Health Commissioner Blake sees no reason for drastic action. Dr. Blake blames what appears to be a fresh outbreak of Spanish influenza on the failure of people to exercise care in keeping away from crowds after he lifted the bans that were put into effect during the late epidemic.

Jewish Health Board Organized.—At a meeting of the Jewish Health Board, recently organized, the following officers were elected: A. Ray Katz, president; Dr. Harry J. Moss, vice president; Herbert Wyle, treasurer, and Mrs. Isidore, secretary. The board will undertake to solve the questions of health and sanitation in Jewish families whenever possible. The organizations interested are: Hebrew Hospital, Social Service Department Hebrew Hospital, Hebrew Benevolent Society, Jewish Country Home, Jewish Home for Incurables, Young Ladies' Benevolent Society, Council Milk and Ice Fund, and the Jewish Home for Consumptives.

MINNESOTA

Death of Mrs. Hilbert W. Hill.—The death is announced of Mrs. Hill, wife of Dr. Hilbert W. Hill, St. Paul, the executive secretary of the Minnesota Public Health Association. The death occurred at the University Hospital, Minneapolis, November 27, from pneumonia following influenza. Mrs. Hill was active in child welfare work.

Course in Public Health Nursing.—The *Minnesota Public Health Association Journal*, December 5, announces that the four months' course in public health nursing, arranged for by the University of Minnesota in cooperation with the Minnesota Public Health Association, is now in operation. The course has been provided as an emergency measure to remedy the shortage of nurses and is offered to a limited number of graduate or senior nurses from accredited training schools. It is expected that a similar course extending over a period of at least eight months will be offered at the University hospital during the coming year.

NEW YORK

Bay Ridge Wants Hospital Returned.—At a recent meeting of the Medical Society of Bay Ridge, resolutions were adopted requesting the United States to rescind its action in taking over the Norwegian Hospital, inasmuch as taking over the hospital has deprived a district six miles square, with an approximate population of 300,000, of proper hospital facilities.

Typhoid at Herkimer.—The typhoid fever epidemic in the village of Herkimer is now believed to be well under control. During November only twenty-five cases developed against 105 cases during October. The majority of the new cases are believed to have been developed by contact rather than by water pollution. The original source of the epidemic was impure water.

Staff of Bureau of Venereal Diseases.—The following permanent appointments have been made to the staff of the Bureau of Venereal Diseases of the state department of health: Dr. Joseph S. Lawrence, Albany, chief; Dr. Edward H. Marsh, Brooklyn, consultant; Dr. Walter S. Goodale, Buffalo, hospital and dispensary inspector and organizer; Dr. Frederick S. Honsinger, Syracuse, lecturer on social diseases; Maud Casey, supervising nurse and social worker.

State Conference of Charities.—The State Conference of Charities and Corrections was held in Rochester, December 10 to 12. At the session of December 11, the problems of mental hygiene were discussed by Dr. Charles W. Pilgrim, Poughkeepsie, president of the State Hospital Commission, and Dr. Walter B. James, New York City, chairman of the state commission of the feebleminded, spoke on "The Duty of the Medical Profession and the State Toward the Mentally Defective."

Influenza Epidemic and Infant Mortality Rate.—The New York State Health Department calls attention to the fact that many babies were born during the period of the influenza epidemic, unattended by either a physician or a midwife. Since the infant mortality rate is based on the number of reported living births, it is very important to have all such unattended births reported by physicians, midwives and nurses as soon as they are discovered in order to prevent the recording of a high infant mortality rate that is not in accord with actual conditions.

Personal.—Dr. Cassar Smith, Olean, is reported seriously ill as the result of a cerebral hemorrhage.——Capt. H. Judson Lipes, M. C., U. S. Army, Albany, formerly of the Sanitary Corps of the One Hundred and Fifth Regiment, at Troy, who was seriously wounded in France, underwent an operation in New York, December 4.——Dr. Esther E. Parker, Ithaca, has returned after thirteen months spent in clinical and roentgen-ray work in France.——Dr. Ralph E. Clogher, Utica, has been invalided home after serving with the medical department of the American Red Cross in France.

Influenza Commission.—The first work of the Influenza Commission appointed by Governor Whitman, October 21, of which Dr. Hermann M. Biggs is chairman, is now under way. The attempt is being made to reach a definite conclusion as to the value of influenza vaccines in preventing the disease. A large number of different groups of people in institutions, cantonments, factories, hospitals, prisons, and patients of various physicians will be studied. Surveys of certain cities where influenza has been most severe will be made, not only in this state but in others, in order to study the cause of the local epidemic, the probable point of entry, the method of spread, types of the disease, the effect of age, sex, and nationality, and the incidence, mortality and morbidity rates. It is probable that in the states that have not been invaded, especially in the west, special studies will be made in regard to prevention by vaccines and the value of quarantine.

New York City

Personal.—Dr. William V. P. Garretson has been appointed consulting neurologist to the Hospital for Functional Reeducation of Disabled Soldiers and Sailors affiliated with Cornell University Medical College.——Major Sigmund Politzer, M. C., U. S. Army, attached to Base Hospital No. 1, was thrown from his car in a collision between automobiles, November 30, suffering a fracture of the skull.——Dr. Pang Yuen Tseo, a Chinese woman, has been assigned to the ambulance staff of Bellevue Hospital.

Influenza and Pneumonia.—The new cases of influenza and pneumonia reported to the health department show that the extent of the disease has neither increased nor diminished during the past few weeks, the number of cases reported daily varying from 100 to 200. The department of health points out that the number of cases will probably continue higher than the average and that sporadic outbreaks are to be expected. A comparison of the mortality rate for influenza in New York with that of other eastern cities shows that New York had a death rate of 27 per thousand population, against 54 in Philadelphia, 47 in Baltimore, 41 in Boston, 34 in Buffalo and 32 per thousand in Newark.

PENNSYLVANIA

Academy Meeting.—At the annual meeting of the Harrisburg Academy of Medicine, held December 6, Dr. M. Howard Fussell, professor of medicine in the University of Pennsylvania, delivered an address on influenza.

Tablet to Influenza Victim.—A bronze memorial tablet in memory of Dr. William B. Shick in Logan was unveiled in the Logan Methodist Episcopal Church, December 8. Dr. Shick died a martyr of his profession during the recent influenza epidemic.

University Offers Occupational Courses.—The school of occupational therapy for maimed soldiers, now stationed at the University of Pennsylvania, is to be united with the university proper and the work of men covers industrial and scientific subjects, including lectures on physiology education and correction for mental speech defects.

Personal.—Lieut.-Col. Richard H. Harte, head of Base Hospital Unit No. 10, one of the first American Hospital units to arrive in France, is in the Pennsylvania Hospital recovering from a serious operation.——Dr. Edward Martin, major in the Medical Reserve Corps and stationed at a camp in Georgia, has ben elected emeritus professor of surgical physiology at the University of Pennsylvania.——Dr. Herman D. Boyles, Newcastle, has been appointed coroner of Lawrence County to fill the unexpired term of the late Dr. Elmer P. Norris.

WEST VIRGINIA

Personal.—Dr. Vincent T. Churchman, Charleston, has succeeded Dr. Floyd F. Farnsworth, Frenchton, as president of the state health council, the latter having been appointed director of the Bureau of Venereal Diseases with headquarters at Charleston under the supervision of the United States Public Health Service.

WISCONSIN

Personal.—Dr. Henry C. Sibree has resigned as health officer of Sturgeon Bay, and has been succeeded by Dr. Thomas C. Proctor. Owing to illness of Dr. Proctor, Dr. Joseph J. Curtin has been placed temporarily in charge of the health office.

Sanatorium Item.—The new tuberculosis sanatorium for LaCrosse County, the tenth institution of its kind to be erected in the state, has been completed at a cost of $95,350.98. The institution has accommodation for forty patients, and already has thirty-five patients and a waiting list more than sufficient to tax the accommodation of the building. Miss L. S. Dietrichson is superintendent of the sanatorium.

CANADA

Unification of Health Boards.—The Essex Border Utilities Commission at the meeting held in Windsor, December 2, expressed themselves favorably toward the unification of the health boards of the five border municipalities of Ford, Walkerville, Windsor, Sandwich, and Ojibway, and decided to ask Dr. John W. S. McCullough, chief medical officer of health of Toronto, for suggestions looking toward a joint system of health inspection.

Hospital News.—A hospital building to cost $500,000 is to be erected near Woodbridge, Ont., about 15 miles from Toronto, by the Soldiers' Civil Re-Establishment. The cost is to be borne jointly by the provincial and federal governments. The site consists of 175 acres. It is to be used for patients with tuberculosis——The Royal Air Force Buildings at Beamsville, Ont., near Hamilton, have been inspected by Dr. Edward Ryan, Kingston, Ont., assistant director of invalided services, Toronto military district. It is quite likely they will be used for returned soldiers.

Personal.—William Edward Gallie, M.B., of the University of Toronto has received a diploma from the Royal College of Surgeons, England.——Among those who have recently returned from overseas are: Major A. D. Irvine, Montreal; Major G. M. Foster, Lieut.-Col. Alfred T. Bazin, Montreal, and Lieut.-Col. Gilbert Royce, Toronto.——Major Wesley Wright Pirt, Carman; Capt. Frederick Charles A'Court; Capt. Henry Maclaren, Ottawa, Ont.; Capt. Henry Clinton Pearson, Toronto, and Capt. Wallace Balfour Seaton, Carman, Man., have been appointed to the board of pension commissioners.——Major Malcolm M. Crawford has been appointed registrar at the new Rosedale Military Hospital, Toronto.——Lieut.-Col. Thomas A. Starkey, professor of Hygiene in McGill University, has returned to Montreal from overseas. He has been appointed consultant in sanitation in the eastern military districts, 4, 5, 6 and 7.

Public Health Act of New Brunswick.—As provided in the Public Health Act, 1918, Province of New Brunswick, the province has been divided into three health districts, each under the supervision of a district medical health officer, who in turn is responsible to the minister of health, a member of the provincial government. The act in addition provides for a chief medical officer, a chief health officer and a chief of laboratories, who complete the central bureau of health. Under the act three branches of public welfare are administered by the same officers, namely, public health and sanitation, medical inspection of schools, and collection of vital statistics. One provision of the act provides that "special attention shall be given to child welfare." The bureau at present consists of Hon. William F. Roberts, M.D., minister of health, St. John, N. B.; George G. Melvin, M.D., D.P.H., St. John, N. B., chief medical officer; Harry L. Abramson, M.D., chief of laboratories, and three district medical health officers, Francis J. Desmond, M.D., Newcastle, N. B.; John F. L. Brown, M.D., Woodstock, N. B., and Joseph A. Wade, M D., St. Andrews, N. B.

GENERAL

Bayer Company Sold.—It it reported that the Bayer Chemical Company has been sold to the Sterling Products Company for $5,310,000.

Venereal Subjects' Travel Restricted.—Under an amendment to the interstate quarantine regulations announced by the Surgeon-General of the United States Public Health Service, persons having venereal disease must obtain a permit in writing from the local health officer before they will be permitted to engage in interstate travel. This permit must state that such travel is not dangerous to the public health.

Fenger Memorial Fund.—The directors of the Fenger Memorial Fund have set aside $500 for medical investigation. It is preferred to assist in work of a direct clinical bearing which may be carried out in an established institution, which will furnish the necessary facilities and ordinary supplies free of cost. Applications with full particulars should be sent to Ludvig Hektoen, 637 South Wood Street, Chicago, before Jan. 15, 1919.

Bequests and Donations.—The following bequests and donations have recently been announced:

Dr. D. Bryson Delavan, New York City, $25,000 and Woman's Hospital in the State of New York, New York City, two fifty-seconds of the estate of $40,000,000 by the will of Mrs. Russell Sage.

St. Lukes Hospital and the Society of Hospitals of New York City, each $17,436 by the will of Clara Sutton Macy.

Hamilton, Mont., Hospital, a donation of $1,000 by Mrs. Margaret Daley, Hamilton.

Enlargement of Marine Hospitals.—Assistant Surgeon-General Arthur M. Stimson, U. S. P. H. S., has asked the house building committee, with the approval of the secretary of the treasury, for an appropriation of $10,000,000 to provide the first 5,000 beds of the 13,000 estimated as necessary to care for discharged soldiers. The completed plan calls for hospitals costing $26,000,000, and in this is included a substantial addition to the United States Marine Hospital at Chicago.

Obligation to Provide Pure Water.—Damages totaling $50,462 on account of typhoid fever and other sickness alleged to have been caused by drinking polluted water on the lake steamer *South American*, sailing from Detroit, have, it is reported, been awarded to eleven plantiffs, passengers on the vessel. The damages were fixed by a master in chancery after Judge Tuttle of the United States District Court had held that the evidence submitted proved beyond question that typhoid fever was contracted on the trip. It was alleged that the steamer, after being out thirteen hours from Detroit, stranded in the Hay Lake Channel of the Sault Ste. Marie River, and that after using up the water in the tanks aboard, impure water from the river was supplied for drinking purposes.

Ten Million for Medical Research.—The will of Capt. James Raphael De Lamar bequeaths his residuary estate estimated at $10,000,000 to the Harvard University Medical School, the College of Physicians and Surgeons of Columbia University, and Johns Hopkins University, for medical research into the cause of disease and into the principles of correct living; for the study and teaching of dietetics and of the effects of different foods and diets on the human system. The will provides that, in connection with the foregoing purposes, fellowships, instructorships, scholarships and professorships be maintained, and clinics, dispensaries and other places for such study and research be provided. Provision is also made for the dissemination of the results of such study among the people of the United States. The will suggests that the legatees use any means they deem expedient for the purposes named, and requests that the fund be kept intact.

Social Hygiene Monthly.—This publication in the October number announces that the work begun and conducted for sixteen months under the auspices of the government, the Surgeon-General's Office, the Commissions on Training Camp Activities of the War and Navy Departments, through the Public Health Service, will not cease with the signing of peace, but that it is the desire to have it go on as a social movement. The monthly will continue publication on that basis and at present has a circulation of 30,000 copies. It is the intention to send the monthly without charge for an indefinite period to leaders of thought and action throughout the United States—to boards of health, educators, legislators, women's clubs, commercial bodies, labor leaders, clergy, etc. The work already accomplished, it is believed, could probably have been done under ordinary circumstances in a generation, and consequently the publication should not now be allowed to lapse.

Major-General Gorgas Investigating Yellow Fever.—In January, 1917, the International Health Board of the Rockefeller Foundation, with the permission of the Secretary of War, secured the services of Surgeon-General Gorgas to act as director of a commission to investigate yellow fever and malaria in Central and South America. In addition to General Gorgas, the commission consists of Henry R. Carter, clinician; Juan Guiteras, clinician and general adviser; Theodore C. Lyster, clinician; Eugene R. Whitmore, pathologist, and W. D. Wrightson, sanitary engineer. Preparations for carrying out this project had been practically consummated when the United States entered the world war making it impossible for General Gorgas to give up his official connection with the Army. Major-General Gorgas, having been retired on account of age, was again available for the work. Immediately on his retirement preparations were again entered into for carrying out the project as originally proposed, and last week he sailed for Ecuador as the first field of operations. Dr. N. E. Horner and other workers had preceded him. Accompanying him are Col. C. L. Furbush, who had acted as General Gorgas' executive officer during the latter's incumbency as Surgeon-General during the war, and Dr. Victor G. Heiser. The work is one in which General Gorgas has shown very especial interest; his sole ambition now, he says, is to rid the world of yellow fever.

Report of the U. S. Chemist.—The report of the Chief Chemist of the Department of Agriculture for the year reflects the influence of the war requirements in the way of personnel and direction of the work of the bureau, which necessitated the side-tracking or closing up of many lines in progress, and the rendering of all possible assistance to aid in winning the war. On account of the high price of drugs it is said that there was a tendency to revive flagrant types of adulteration, but with the aid of state and local authorities and the Food Administration it was often possible to suppress violations of the Food and Drugs Act more quickly than in normal times. The statistics of arrests and prosecutions with their results are given. Conservation of foodstuffs occupied some of the attention of the bureau, and the campaign for the extension of the use of new food fish was pushed, and such subjects as dehydration of vegetable products received considerable attention. Technologic investigations concerned such subjects as dust explosions, color investigations, naval stores, leather tanning and finishing materials, mildewproofing, fiber containers, the nutritive value of proteins and their chemistry, sugars and syrups, beverages and vinegar, fruits and vegetables, cereals and flour and the biologic causes of food spoilage and fermentation, beside researches in drugs and pharmacology, etc. In collaboration with other departments much good work was done, such as helping to secure fraud orders against fraudulent medicinal preparations, making recommendations to the railroad administration on the subject of standard refrigerator cars, assisting in food surveys, and methods of poisoning rats; this last in connection with the biological survey.

Influenza.—In a bulletin issued by the Public Health Service, December 11, a warning was given that the influenza epidemic is not passed and it is shown that severe epidemic conditions exist in various parts of the country. Since that date, according to later reports, the general condition has remained much the same, with improvement in some states and communities, and recurrences in others. The following summary by the service very well represents the present situation: In California increases in the number of cases of influenza are reported by San Francisco and several other cities in California. Indiana reports no improvement in the situation, except that the recent cases are milder. In Iowa a marked increase in the number of cases is reported. Kentucky reports a decided recrudescence in Louisville and some of the larger towns in the state. A few rural sections also report serious conditions. In contrast to the earlier part of the epidemic, the disease now appears to affect large numbers of schoolchildren. In Louisiana the disease has again increased in New Orleans, Shreveport, Lake Charles, Natchitoches, Standard, Zwolle, Noble, Convent and Kilbourne. At Lake Charles the recrudescence began December 1, and reached a height equal to that of the original epidemic. In Massachusetts the disease is apparently mild in character, but 5,500 cases were still reported last week. St. Louis reports more than 1,700 cases of influenza in three days, ending December 9. Mississippi reports a recrudescence in Hattiesburg. In Nebraska the situation is still very serious. New Jersey reports a substantial increase in a number of districts in which the disease had subsided and the disease is still prevalent throughout the state. From Ohio recrudescences are reported as occurring in Cincinnati, Cleveland, Columbus, Akron, Ashtabula, Bucyrus, East Liverpool, Salem, Lakewood, Medina, Franklin, Marion, Niles and Youngstown. The disease appears to be milder than during the first period of the epidemic. Pennsylvania reports a recurrence of influenza in a number of localities. Conditions are said to be worse than the original outbreak in Erie, Newcastle, and Johnstown. In South Carolina there is a general recurrence, especially in those sections where the epidemic raged some time ago. Vermont reports a recrudescence, but the disease appears to be milder in character. The state of Washington shows a sharp increase in the number of cases of influenza reported. West Virginia reports a recrudescence of the disease in Charleston, South Charleston, Bluefield and Clarksburg. In Wheeling conditions are said to be as bad as ever. The Surgeon-General advises the closing of the public schools on the first sign of the reappearance of the epidemic and points out that the disease apparently now tends to occur more frequently among schoolchildren.

FOREIGN

Roux to Retire.—Dr. Pierre Roux, for many years director of the Pasteur Institute, Paris, is about to retire and will be succeeded by Dr. A. C. Calmette, director of the Pasteur Institute of Lille.

Awards of the Royal Society Medals.—The *British Medical Journal* announces that the Copley medal this year goes to Prof. H. A. Lorentz, late professor of physics in the University of Leyden, for his researches in mathematical physics; the Davy medal to Prof. F. S. Kipping, professor of chemistry at University College, Nottingham, for his studies in the camphor group and among the organic derivatives of nitrogen and silicon; the Darwin medal to Dr. H. F. Osborn of New York, for his researches on vertebrate morphology and paleontology, and one of the Royal medals to Prof. F. G. Hopkins, professor of biochemistry in the University of Cambridge, for his researches in chemical physiology.

Deaths in the Profession Abroad.—Dr. **Ruperto Borras**, a member of the Uruguayan Medical Mission in France. After the return of the mission he remained in France, serving for many months at the Vaugirard military hospital at Paris.——Dr. **L. Merelli**, a prominent bacteriologist and serologist of Pisa, a victim of influenza.——Dr. **F. Todaro**, professor of anatomy at Rome, rector of the university and senator of the realm, aged 83.——Dr. **C. Remy**, professor of surgery at the University of Paris.——Dr. **Marty**, one of the oldest members of the Paris Académie de Médecine, a consulting chemist for the government.——Dr. **C. Colombo**, director of the Instituto kinesiterapico at Rome, and leader in the movement for physical culture for the young.——Dr. **O. Duurloo** of Copenhagen, president of the organized medical officers of the sickness insurance societies, aged 46.——Sir **H. Weber**, London, author of "Prolongation of Life," aged 95. He retired from practice at 80 but spent daily two or three hours in the open air, walking for 30 to 50 miles a week. He was among the first to advise the tuberculous to go to the mountains, even in winter. He was an honorary member of many learned societies, and with his son, Dr. F. Parkes Weber, published "Climatotherapy."

Fifth International Psychanalysis Congress.—The world war interfered with the meeting of this congress which had been planned to be held at Dresden. Besides the war, there were also certain difficulties in the way in connection with Jung's so-called "split" in the psychanalytic movement. A Netherlands physician, Dr. J. H. W. van Ophuijsen, now relates in the *Nederlandsch Tijdschrift*, Oct. 19, 1918, that the postponed congress was finally summoned to meet at Budapest, Sept. 28-29, and he describes his impressions of the congress as he made the trip from 's-Gravenhage, Holland, to Budapest. The main theme for discussion was the treatment of war neuroses, and the addresses by Ferenczi of Budapest, K. Abraham of Allenstein and E. Simmel of Posen, all concurred in estimating war neuroses as merely manifestations of the mechanism of the reaction to fright, the "fright neuroses" of peace times. The speakers were also unanimous in classifying these neuroses, with Freud, as anguish-hysteria and repression-hysteria. The number of cases of actual psychasthenia which have developed during the war was stated to be extremely small. Some brief communications discussed psychanalysis from the medical standpoint, and others discussed it in its application to other sciences. Between these two fields stood Freud's own address on "Ways for Psychanalytic Therapy." Jellinek and Roheim discussed "Friendship" and "The Ego Among Primitive Peoples," and Tausk outlined the principles for psychanalysis of the faculty of judgment. It was decided that the next international Psychanalysis Congress will be held in the Netherlands.

SOUTH AND CENTRAL AMERICA, MEXICO AND WEST INDIES

Resignation of Surgeon-General of Colombian Army.—The *Repertorio* of Bogotá states that Dr. M. Canales has resigned his position as chief of the medical department of the Colombian army.

Recent Deaths in the Profession.—Dr. E. Peña, director at one time of the Asistencia Publica of Buenos Aires, and initiator of the Hospital Tornu for the tuberculous.——Dr. V. Grau, city physician of Tres Arroyos, aged 71.——Dr. C. C. Sundblad, one of the founders of the Children's Hospital of Buenos Aires, aged 62.——Raphael Rubirosa, formerly a leading surgeon of the Dominican Republic, aged 33, died recently in the Manhattan State Hospital, New York.

Finlay Souvenir Volume.—The July-August number of the handsome journal issued by the national public health authorities of Cuba is entitled "Numero extraordinario en homenaje a la memoria de Dr. Carlos J. Finlay," on the anniversary of his death. It contains 197 pages, the size of the pages nearly as large as those of The Journal, and contains a photograph of Dr. Finlay and of the monument with his portrait bust which has been installed in the court of the headquarters of the public health department, the *Secretaria de Sanidad y Beneficencia.* All of Finlay's scientific works are reproduced or summarized, from 1865 to 1912. His communication on the transmission of yellow fever through an intermediary agent was presented to the International Sanitary Conference at Washington, D. C., in 1881. He did not specify the mosquito in that communication, but did this in his address before the Academia de Ciencias Medicas, Fisicas y Naturales, at Havana, Aug. 14, 1881. His address was republished in English and Spanish with the title "The Mosquito Hypothetically Considered as the Agent of Transmission of Yellow Fever." This journal issued by the National Public Health Service in Cuba, *Sanidad y Beneficiencia,* is always a large handsomely printed and illustrated journal with articles in Spanish and in English, bearing on matters of sanitation, vital statistics, etc. The director of the service is Dr. F. M. Capote, with Dr. Juan Guiteras and Dr. R. Menocal as subdirectors. The editor of the journal is Dr. E. Aragon. It is now in its twentieth volume.

MEXICO LETTER

Mexico City, Dec. 1, 1918.

Influenza

Influenza spread throughout the whole of the Republic, from north to south, during October and November. The central tableland was most seriously affected, the seacoast much less.

Puebla suffered most, the deaths totaling 300 a day, to a population of 100,000. The City of Mexico also had its daily death rate increase from seventy-five to 250. The disease appeared in a hemorrhagic form, a nervous with delirium and a gastro-intestinal form, but the highest mortality was in the respiratory form, frequently complicated with bronchopneumonia. It seems—in accord with what has been observed elsewhere—that young persons were affected most, and that persons who had the disease in a severe form in 1890 escaped it this time.

Bacteriologic research revealed nothing new, only the usual microbes of bronchitis and pneumonia being encountered, and the Pfeiffer bacillus only occasionally. Dr. F. Paz of the National Bacteriologic Institute, cultivated the *Micrococcus catarrhalis* from the blood of patients on two occasions.

At date of writing, the disease seems to have died out in this city and throughout most of the country.

Smallpox

There have been some cases of hemorrhagic smallpox at Puebla recently, but the disease has not spread owing to prompt isolation of the sick and vaccination of the others.

The Liberty Loan in Mexico

The Fourth Liberty Loan was a complete success in Mexico, as the quota assigned, $1,000,000, was oversubscribed, over $2,250,000 being collected. The bonds were bought not only by citizens of the United States residing here, but by citizens of the other Allied countries and by a goodly number of Mexican sympathizers with the noble cause. The boche propaganda tried to make the public believe that the business would be a failure, but like the propaganda itself, it lost influence and failed of effect because it had been placed in the hands of foreign adventurers or of Mexicans with antecedents not particularly honorable.

The Armistice

There was great rejoicing in the Capital when the news arrived that the armistice had been signed in Europe. The majority of the cultivated elements of the nation had sustained the cause of the Allies, and they joined with the foreigners in celebration of the victory. Impressive religious services were held as well as balls and banquets to celebrate the success obtained by the American arms in the cause of justice for the world. The most eloquent of Mexican orators, Lic. Urueta, said at one important meeting in Mexico that only imbeciles or the ignorant had sided with the cause which Germany sustained, and he was much applauded.

Personal

The director of the National Medical School, Dr. R. Amor, has been appointed *senador suplente* for the federal district.——Dr. A. F. Alonso, a well known ophthalmologist of San Luis Potosi, has recently moved to Mexico City. He represents the state of San Luis in the senate where he has always expressed opinions favorable to the cause of the Allied nations.——Dr. E. L. Abogado died recently. He was president of the local medical society, known as the "Pedro Escobedo." For many years he published a medical journal, now defunct, the *Cronica Medica Mexicana.*

New Society

A scientific and mutual aid society has recently been founded in Mexico, entitled the Sociedad Mexicana de Agricultura y Veterinaria. Its headquarters are 4/a de Donceles, 87, Ateneo Ceres, Mexico, D. F.

Cultivation of Quinin

The government through the agricultural department has applied to Ceylon and to Peru for a good quantity of seeds of different species of "cinchona," with the object of cultivating this useful plant in the warm regions of the country. Attempts have been made on other occasions to cultivate the quinin plant in the state of Veracruz, but even although it was found to thrive well there, its cultivation never was carried to a point where it would have commercial importance.

Infant Welfare in Yucatan

The municipality of Merida, Yucatan, recently organized a competitive baby show with certificates and money prizes. The show was a great success. The *Universal,* the leading Mexican daily, has organized on different occasions two competitive exhibitions of the kind.

Aid for the People of the Devastated Regions

The ladies of the Allied colonies here are still busily at work making garments to be sent to Europe to relieve the peoples freed from the yoke of the invader.

Donation

A number of persons contributed money to aid in the combating of the epidemic of influenza, among others, Mr. E. L. Doheny of New York, president of the Huasteca Petroleum Co., who donated 30,000 pesos for the purpose.

Vital Statistics

As a curiosity, I add the official record of the deaths over a certain period in a town in San Luis fifty years ago: Died a natural death, 1; died of grief, 5; died of fright, 2; died of disease, 2.

LIMA LETTER

Lima, Peru, Nov. 7, 1918.

Personal

The National Academy of Medicine has just resumed its labors with important discussions on the compulsory registration of tuberculosis and the sanitary improvement of Lima. The existing vacancies in its membership have been filled by the election of Drs. Carlos Monge, Ramon Ribeyro and Carlos Enrique Paz Soldan.

Sanitation of Lima

Congress has just passed the bill, which will soon become a law, on the sanitation of Lima. It includes rebuilding of the city sewers, provision for a new water supply, and street paving. The law contemplates the placing of a loan of $5,000,000, 70 per cent. of which will be offered in foreign countries, most probably in the United States. Proposals for these works will be requested from constructing firms, thus offering an excellent opportunity for American houses which might wish to invest money in Peruvian enterprises. Mr. Spalding, a civil engineer, is under contract with the city of Lima for the preparation of the necessary plans.

Febrile Epidemic

At present, Lima, Callao and the smaller towns in that vicinity, as likewise other cities in the country, are suffering an epidemic of catarrhal character, probably influenza, which has caused a great deal of sickness. The chief symptoms are a high fever (100.2 to 104 F.) with no initial chills, abundant expectoration, cough, nasopharyngeal catarrh, prostration, and nosebleeding on the third or fourth days coinciding with the subsidence of the fever and the bronchial cold that follows. The fever lasts only three or four days, is mild and only causes death when previous lesions existed among the infected persons. In order to avoid the spread of the disease, a number of measures have been adopted; as closing the schools, issuing popular pamphlets of instruction and the appointment of a special commission to perform bacteriologic examinations. The work of the commission has not been made public as yet, but it seems that the presence of a gram-positive diplococcus has been verified a number of times. The Academy of Medicine has also appointed a commission of investigation.

The Orphan Asylum

The Society of Public Welfare of Lima has begun the construction of an adequate orphan asylum for which contributions have already been received to the extent of $250,000. Steps are also being taken for the establishment of an indigent asylum.

PARIS LETTER

Paris, Nov. 21, 1918.

Etiology and Transmission of Trench Fever

At a recent meeting of the Académie de médecine, Dr. Strong read a report on this subject. Trench fever raged in some of the armies on the western front, causing a considerable morbidity. In order to secure information as to the development of the disease, it was considered necessary to investigate the mode or method of transmission. A commission appointed by the American Red Cross undertook this work, and conducted experiments on American soldiers which disclosed the method of transmission. Trench fever is not transmissible to animals. Of 103 experiments on men, infected by bites of lice or transmission by the blood, the urine or the sputum, the disease was produced in sixty-three. These experiments confirmed the belief that trench fever is a specific infectious disease. The causative organism is a nonfiltrable virus, present in the blood plasma; inoculating healthy persons with this plasma produces the disease. The disease is usually transmitted through the bites of lice. The virus may be found in the urine and in the sputum. These excretions should, therefore, always be sterilized and every effort should be made to protect the soldiers against the bites of lice.

A Ministry of Public Health

In the name of the Commission d'hygiène of the Chambre des Députés, M. Navarre, deputy of the département de la Seine, proposed the creation of a ministry of public health to coordinate and have control of all the public health services, civil and military hospitals, asylums, etc.

In Honor of the American Red Cross

M. Davison, president of the war committee of the American Red Cross, was received at the Hotel de Ville de Paris, the day following the signing of the armistice. The city authorities made it a festive occasion. Dr. Louis Mourier, undersecretary of state for the Service de Santé militaire, was present at the ceremony, accompanied by Maréchal Joffre. M. Chassaigne-Goyon, president of the Conseil municipal de Paris, addressing Mr. Davison, expressed deep gratitude for the miracles accomplished by the Red Cross, and for the generosity of countless Americans who had made these miracles possible.

Control of Radium

A decree has been published in the *Journal Officiel* organizing the control of the manufacture and distribution of radium and, in a general way, of all radio-active substances and luminous products derived from them. This Bureau des corps radioactifs, created in the ministère de l'armement, will have supervision of manufacture, importation and exportation. The consumption will be controlled by the office of the undersecretary of state for the Service de Santé militaire, and the geographic service of the army.

Death of Dr. Gaston Humbert

Dr. Gaston Humbert, assistant professor on the medical faculty of Paris, and surgeon to the hospitals, is dead.

Personal

At its last meeting the Académie de médecine elected to membership in the section de pathologie médicale, Dr. Charles Dopter, médecin principal of the army, professor of epidemiology in the Ecole d'application de médecine et de pharmacie militaires du Val-de-Grâce.

LONDON LETTER

London, Nov. 14, 1918.

Sir Auckland Geddes

In this country, unlike France, very few physicians enter Parliament, and much fewer attain a prominent position in the political world. However, there are two ministers in the present government who before they entered politics were qualified though not practicing physicians. Curiously, they were both lecturers on anatomy. Dr. Addison, the minister of reconstruction and former minister of munitions, was lecturer on anatomy at St. Bartholomew's Hospital before he entered Parliament as liberal member for the working class constituency in London. Sir Auckland Geddes, the minister of national service, graduated with the degree of M.D. at Edinburgh in 1906 and subsequently became professor of anatomy at the Royal College of Surgeons of Ireland and later at McGill University, Montreal, where he made a reputation as a biologist. He served in France during the war and attained the rank of brigadier-general. Unlike Dr. Addison, he was not a politician before he entered the government. The prime minister, Mr. Lloyd George, made a new departure when he formed his government by appointing ministers who were not politicians but experts in regard to the duties they had to take up. Sir Auckland Geddes' brother, Sir Eric Geddes, the first lord of the Admiralty, is another example. He was previously controller of the Admiralty. Sir Auckland Geddes has just been appointed president of the Local Government Board, the duties of which he will combine with those of his present duties of minister of national service. With the close of the war the latter duties must considerably diminish. It is thought that he will become the first minister of health, an office which, as foreshadowed in previous letters, is to be created. The results of the examination of the whole male population of military age by the ministry of national service has disclosed an enormous amount of physical unfitness in the population, only about one third being found fit for Grade 1. The new ministry of health will combine all the duties with regard to the health of the people that have been performed by many departments, with consequent waste of energy and want of cooperation.

Strike at an Irish Lunatic Asylum

More than 180 attendants at Ballinasloe Asylum went on strike from the institution at half an hour's notice, leaving about 1,500 lunatics unguarded. There were in the asylum at the time about 280 patients with suicidal and homicidal tendencies. The committee offered a 10 per cent. rise on prewar wages without the bonus, but this was refused. Fifty patients, several of the most dangerous type, escaped. After six hours' absence the staff was prevailed on by a priest to resume work. The resident magistrate on his own responsibility guaranteed the required wages.

Marriages

Walker Atwood Yeakle, Assistant Surgeon (j. g.), U. S. N. R. F., Norristown, Pa., on duty at Norfolk, Va., to Miss Elizabeth M. Wheeler of Towson, Maryland, November 27.

Hugh Quitman Allison, Lieut., M. C., U. S. Army, Grayville, Ill., to Miss Bessie Williams of Mount Carmel, Ill., at Belleville, Ill., February 8.

Aloysius James Larkin, Melvin, Ill., to Miss Florence Mary Garvy of Chicago, September 4.

Henry H. Seltzer, Washington, D. C., to Dr. Sarah L. Behm of Colorado, recently.

Deaths

Samuel Abbott Green, Boston; Harvard Medical School, 1854; aged 88; a member of the Massachusetts Medical Society; surgeon of the Second Massachusetts Militia in 1858; assistant surgeon, First Massachusetts Volunteers, and surgeon, Twenty-Fourth Massachusetts Volunteers, and brevetted lieutenant-colonel for gallant and distinguished services in the field during the Civil War; superintendent of the Boston Dispensary from 1865 to 1872; city physician of Boston from 1871 to 1881; mayor of Boston in 1882; a member of the board of experts appointed by Congress to investigate yellow fever in 1878; for thirty years an overseer of Harvard College; a trustee of the Peabody Education Fund since 1888; librarian and vice president of the Massachusetts Historical Society; author of many monographs on historical subjects; died in the Hotel Lennox, Boston, December 5.

Benjamin Troop Phillips, Menominee, Mich.; Rush Medical College, 1870; aged 78; a member of the Michigan State Medical Society; president of the Wisconsin State Medical Society in 1892; a veteran of the Civil War; chief surgeon of the Lumbermen's Provident Hospital and St. Joseph's Hospital; one of the founders and for a time professor of surgical anatomy and operative surgery on the cadaver in the Wisconsin College of Physicians and Surgeons, Milwaukee; local surgeon of the Chicago and Northwestern system since 1871; died at his home, November 29, from cerebral hemorrhage.

Howard Walter Beal, Major, M. C., U. S. Army ⊕ Worcester, Mass.; Harvard Medical School, 1898; aged 49; a member of the American Association of Genito-Urinary Surgeons, and American Urological Association; formerly Acting Assistant Surgeon, United States Army, surgeon to the out-patient department and cystoscopist to the Worcester Memorial Hospital, and cystoscopist to the Worcester City Hospital; who was injured by a shell fragment, while on duty with the American Expeditionary Forces in France, July 18, died from his wounds in Paris, two days later.

Stephen John Henry Reed ⊕ **Capt., M. C., U. S. Army,** Fultonville, N. Y.; Albany (N. Y.) Medical College, 1907; aged 37; for two terms coroner of Montgomery County; who went to France with the One Hundred and Thirtieth U. S. Infantry, in May last, and afterward was assigned to the One Hundred and Thirtieth Field Hospital, Sanitary Train No. 108; was killed in action at Hill No. 281, October 21, and buried in the military cemetery at Glorieux, France.

Died in the Service
IN FRANCE
Capt. Stephen J. H. Reed, M. C., U. S. Army, 1881-1918

Irvin Edmund Bennett, San Francisco; University of Boulder and Denver, 1889; Jefferson Medical College, 1891; at one time a member of the Medical Society of the State of California; a veteran of the Spanish-American War, in which he served in the Philippine Islands as captain of United States Volunteers; a member of the staff of the Southern Pacific Hospital; died, October 28, from influenza.

William Breinig Erdman ⊕ Macungie, Pa.; University of Pennsylvania, Philadelphia, 1860; aged 80; a member of the state legislature in 1881 and 1883; for more than fifty years a member and for many years president of the Macungie School Board; one of the organizers of the Lehigh County Medical Society; a specialist on diseases of the eye and ear; died at his home, November 30, from influenza.

Andrew B. Gloninger, Lebanon, Pa.; University of Pennsylvania, Philadelphia, 1883; aged 57; formerly chief surgeon of the Good Samaritan Hospital, and founder and chief surgeon of the Lebanon Sanatorium; surgeon of the Fourth Pennsylvania Infantry during the war with Spain; died in his office, December 3, from heart disease.

Albert Bellingraph Mason, Waycross, Ga.; Atlanta, Ga., College of Physicians and Surgeons, 1909; aged 31; a member of the Medical Association of Georgia and American Academy of Ophthalmology and Oto-Laryngology; a specialist on diseases of the eye, ear, nose and throat; died at his home, December 4, from pneumonia following influenza.

Died in the Service
IN FRANCE
Capt. James MacFarland, M. C., U. S. Army, 1887-1918
(See The Journal, last week, p. 2011)

Albert Hayden, Shellsburg, Wis.; Washington University, St. Louis, 1876; aged 67; a member of the State Medical Society of Wisconsin, and a charter member of the Lafayette County Medical Society; local surgeon of the St. Paul System for twenty-five years; died at his home, December 6, from cerebral hemorrhage.

William Thomas Murphy ⊕ **Lieut., M. C., U. S. Army,** Waukesha, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1904; aged 38; on duty with the Three Hundred and Thirtieth Aero Squadron; died in a hospital in Grantham, England, November 2, from pneumonia following influenza.

Daniel MacNorton, Yorktown, Va. (license, Virginia, 1885); aged 63; a practitioner for forty years; first collector of customs for the port of Newport News, Va., and once a member of the Virginia state senate and house of representatives; died in the Dixie Hospital, Newport News, November 29.

Joseph S. Gentile, Chicago; Chicago College of Medicine and Surgery, 1913; aged 33; a member of the staff of the Columbus Extension Hospital; who was shot, December 14, by a patient whom he was called to attend; died in the Columbus Extension Hospital the following morning.

James Russell Stewart ⊕ Colorado Springs, Colo.; Johns Hopkins University, Baltimore, 1909; aged 36; secretary of the El Paso Medical Society from 1916 to 1918; a specialist in tuberculosis; died in a hospital in Colorado Springs, December 6, from pneumonia following influenza.

Amos Frank Baumann, Waterloo, Ont.; Trinity Medical College, Toronto, 1885; aged 61; for ten years medical officer of health of Waterloo; a medical director of the Dominion Life Insurance Company since its organization in 1889; died at his home, November 25, from heart disease.

Frank Edgar Simons, Canajoharie, N. Y.; Albany (N. Y.) Medical College, 1879; aged 67; a member of the Medical Society of the State of New York, and president of the Montgomery County Medical Society; died in Canajoharie, October 1, after an operation for prostatic abscess.

George Joseph Spencer, Chicago; University of Illinois, Chicago, 1908; aged 41; at one time a member of the Illinois State Medical Society; city physician of Chicago, in 1911; who was in government service in Albany, N. Y.; died in that city, December 6, from pneumonia.

Clyde Edward Prudden ⊕ **Major, M. C., U. S. Army,** Duluth, Minn.; Northwestern University Medical School, Chicago, 1909; aged 30; a specialist in obstetrics and gynecology; is reported in the *Official Bulletin* of December 2, to have died from disease in France.

Robert Armistead McLean, Berkeley, Calif.; University of California, Berkeley, and San Francisco, 1874; aged 67; at one time a member of the Medical Society of the State of California; emeritus professor of surgery in his alma mater; died at his home, December 4.

Robert Archibald Gray, Shreveport, La.; University of Louisville, Ky., 1853; aged 88; a member and at one time president of the Louisiana State Medical Association; surgeon in the Confederate Service during the Civil War; died at his home, November 25.

William Sarsfield Morriss ⊕ **Lieut., M. C., U. S. Army**, Fall River, Mass.; Harvard Medical School, 1915; aged 29; on duty at Camp Joseph B. Johnston, Jacksonville, Fla.; while on furlough, died at his home, October 11, from pneumonia following influenza.

Joseph Vincent Kelly ⊕ Philadelphia; Jefferson Medical College, 1868; aged 74; medical director of St. Mary's Hospital and visiting physician to St. Timothy's Hospital; who served in the Navy throughout the Civil War; died at his home, December 6.

Charles LeRoy Griswold, Nanticoke, Pa.; University of Pennsylvania, Philadelphia, 1907; aged 35; a member of the Medical Society of the State of Pennsylvania; died at the Nanticoke State Hospital, October 7, from pneumonia following influenza.

Clarence Howarth White ⊕ **Lieut., M. C., U. S. Army**, Cohoes, N. Y.; University of Michigan, Homeopathic Medical School, Ann Arbor, 1909; aged 30; is reported to have died in a military hospital in France, November 12, from pneumonia.

William H. Moore, Martinsdale, Mont.; St. Louis University, 1905; aged 40; a large ranch owner of Montana; formerly a specialist on diseases of the eye, ear, nose and throat; died in St. Peter's Hospital, Helena, Mont., December 1, from pneumonia.

James Malcolm McKibbon ⊕ **Capt., M. C., U. S. Army**, Buck Valley, Pa.; University of Pennsylvania, Philadelphia, 1899; aged 46; died in Mobile Hospital No. 4, France, October 23, from wounds received while on duty on the fighting line.

Thomas Lindsley Bradford, Philadelphia; Homeopathic Medical College of Philadelphia, 1869; aged 71; author of several books and monographs on hemeopathy; librarian of Hahnemann Medical College; died at his home, December 3.

Benjamin William Carlson ⊕ **Capt., M. C., U. S. Army**, Denver; University Medical College of Kansas City, Mo., 1903; aged 44; on duty at Kelly Field, South San Antonio, Texas; died at that post, November 20, from pneumonia.

William Frank Guilfoyle ⊕ **Lieut., M. C., U. S. Army**, Philadephia; University of Pennsylvania, Philadelphia, 1905; aged 36; on duty with Base Hospital No. 31 in France; after having been gassed, died, September 2, from exhaustion.

Joseph Augustine McGowan, Philadelphia; University of Pennsylvania, Philadelphia, 1899; aged 43; physician to the Church Dispensary Southwark; died at his home, September 7, from carcinoma of the glands of the neck and throat.

Porton Rivolo Bennett, Los Angeles; Bellevue Hospital Medical College, 1879; aged 75; at one time a member of the Medical Society of the State of California; died in Daytona, Fla., November 19, from locomotor ataxia.

William Preston Harden, Bushville, near Commerce, Ga.; Emory University, Atlanta, Ga., 1886; aged 52; a member of the Medical Association of Georgia; died at his home, November 13, from pneumonia following influenza.

John D. Gordon Smith, Zolfo, Fla.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1912; aged 30; a member of the Florida Medical Association; died at his home, October 15, from pneumonia following influenza.

Herbert Ewing Larkins, Charlotte, Tenn.; University of Nashville, Tenn., 1909; aged 40; a member of the Tennessee State Medical Association; died at his home, October 16, from bronchial pneumonia following influenza.

Thomas Tounge Perkins ⊕ Cliftondale, Mass.; Boston University, 1898; Harvard Medical School, 1901; aged 45; a specialist on diseases of the eye, ear, nose and throat; died at his home, December 6, from heart disease.

Herbert Conrad Goings ⊕ Matewan, W. Va.; University of Louisville, Ky., 1896; aged 42; for ten years owner of the Matewan Sanitarium; died at his home, October 14, from bronchial pneumonia following influenza.

L. F. Alfred Ouellet, Orwell, Vt.; Laval University, Quebec, 1894; aged 48; a member of the Vermont State Medical Society; died at his home, October 5, from bronchopneumonia.

Harvey Lasher Thorpe, ⊕ **Capt., M. C., U. S. Army**, Los Angeles; Rush Medical College, 1909; aged 36; who left California, for overseas, October 15, died at sea, November 4, from pneumonia, following influenza.

Romulus Falardeau, Montreal, Que.; Montreal School of Medicine and Surgery, 1908; aged 34; assistant to the surgical clinic of Laval University, and chief surgeon of the St. Justine Hospital; died, October 5.

Albert Marinius Larkin ⊕ **Lieut., M. C., U. S. Army**, Jasper, Minn.; University of Minnesota, Minneapolis, 1917; aged 29; is reported in the *Official Bulletin* of December 2, to have died from disease in France.

Allison Brown, Memphis Tenn.; Memphis Hospital Medical College, 1898; aged 46; at one time acting assistant surgeon, U. S. P. H. S., and on duty at Fort Stanton, N. M.; died at his home in Memphis, November 25.

William Johnston Calhoun ⊕ St. Charles, Ill.; University of Pittsburgh, 1891; aged 56; health officer of St. Charles; local surgeon of the Chicago, Great Western System; died at his home, December 9, from pneumonia.

Samuel Howard Monell, New York City; Bellevue Hospital Medical College, 1890; aged 61; a charter member of the Roentgen-Ray Society of the United States; died at his home, December 3, from pneumonia.

David Frank Hallett, McCool Junction, Neb.; Hahnemann Medical College, Chicago, 1878; aged 63; who was stricken with cerebral hemorrhage while making a professional call, November 23, died, November 30.

John Edward Williams ⊕ **Lieut., M. C., U. S. Army**, Roselle Park, N. J.; College of Physicians and Surgeons in the City of New York, 1913; aged 26; died in Chaumont, France, in August, from paratyphoid fever.

Eugene Van Valkenburgh Riker ⊕ Flint, Mich.; University of Michigan, Ann Arbor, 1887; aged 57; a specialist on diseases of the eye, ear, nose and throat; died at his home, November 25, from pneumonia.

Eliza F. Pettingill, Philadelphia; Womans Medical College of Philadelphia, 1864; aged 77; one of the promotors and visiting physician to the Women's Homeopathic Hospital; died at her home, December 2.

Leech Key Cracraft ⊕ **Lieut., M. C., U. S. Army**, Elm Grove, Wheeling, W. Va.; University of Virginia, Charlottesville, 1905; aged 36; died at his home, November 26, from pneumonia following influenza.

John N. Judy, Petersburg, W. Va. (license, West Virginia, 1901); aged 49; a member of the West Virginia State Medical Association; died at his home, October 27, from pneumonia following influenza.

William Hamilton Young, Starkville, N. Y.; Albany (N. Y.) Medical College, 1899; aged 39; D.P.H., McGill University, 1907; died at his home, October 14, from pneumonia following influenza.

George W. Caldwell, Waggoner, Ill. (license, years of practice, Illinois, 1877); aged 84; for sixty-three years a practitioner of Montgomery County, Ill.; died at his home, November 28.

Alexander Cairns, Coeur d'Alene, Idaho; St. Louis University, 1907; aged 49; who was awaiting commission in the Medical Corps, U. S. Army; died at his home, recently, from pneumonia.

Willoughby Dozier, Nashville, Tenn.; University of Tennessee, Nashville, 1877; aged 75; surgeon in the Confederate service throughout the Civil War; died at his home, November 8.

Edwin James Gravatt, Troy, N. Y.; New York University, New York City, 1891; aged 48; for six years coroner of Rensselaer County; died at his home, December 2, from pneumonia.

Alphonse F. Mercier, Montreal, Que.; Montreal School of Medicine and Surgery, 1894; aged 48; professor of the history of medicine in his alma mater; died, October 24.

Owen Harrison Foringer ⊕ Erie, Pa.; University of Pittsburgh, 1913; aged 32; a specialist in anesthesia; died at his home, October 20, from pneumonia following influenza.

George Elliott Merrick, Pittsburgh; College of Physicians and Surgeons, Baltimore, 1903; aged 45; died suddenly at Newcastle, Pa., November 5, from heart disease.

Henry James Mueller ⊕ Les Vegas, N. M.; Missouri Medical College, St. Louis, 1893; aged 49; died at his home, October 15, from pneumonia following influenza.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

GOLDWATER ORDINANCE DEFEATED—ITS PRINCIPLE UPHELD

A Hollow Victory for the Nostrum Interests

On Dec. 31, 1914, the Department of Health of the City of New York revised the Sanitary Code so as to require that on and after Dec. 31, 1915, no proprietary or "patent medicine" should be sold in the city of New York until certain requirements had been met. The requirement was, in effect, that "the names of the ingredients of every such medicine to which the therapeutic effects claimed are attributed, and the names of all other ingredients except such as are physiologically inactive, shall be registered in the Department of Health." The ordinance did not apply to those proprietary or "patent medicines" which already gave the names—not quantities—of the ingredients on the label. This revision of the Sanitary Code—popularly known as the "Goldwater Ordinance"—was made, of course, in the interest of the public health. The ordinance left much to be desired from a public health standpoint, in that it did not require a quantitative formula, and further, in that it permitted an alternative of giving the public the facts. As THE JOURNAL pointed out at the time, if a layman desires to treat his own simple ailments —as he has a perfect right to—he has a right to demand the names and quantities of the drugs he is pouring down his throat.

In spite of its shortcomings, and in spite of the fact that the ordinance was not an onerous one, it was bitterly fought by the "patent medicine" interests. The fight was led by E. Fougera & Co., E. N. Crittenton Co., and H. Planten & Son. The case dragged its way through the courts and finally reached the Court of Appeals of the State of New York, which, a few weeks ago, handed down a decision in the matter. The decision was, in effect, that the ordinance had one real defect, although, as the court pointed out "one that amendment may correct," and that was that it did not protect the rights of dealers who had such preparations on hand at the time the ordinance went into effect. The court held, therefore, that in this regard, the Board of Health had exceeded the power delegated to it.

In discussing the objections raised by the Fougera concern to the ordinance, the Appellate Court said that most of them "we reject as inadequate." Quoting from the opinion handed down:

> "The argument is made that the ordinance is an arbitrary exercise of the power of government. We do not think so. Its purpose and effect are well within the limits of the police power. The purpose is the preservation of the public health and safety. . . . The form of protection is publicity. THERE MUST BE DISCLOSURE OF THE TRUTH TO RESPONSIBLE OFFICIALS WHO WILL PREVENT OR PUNISH THE SALE OF FRAUDULENT OR NOXIOUS COMPOUNDS. IF THAT IS NOT A LEGITIMATE PUBLIC AIM, WE ARE AT A LOSS TO KNOW WHERE ONE MAY BE FOUND. It is not important that the ordinance fails to compel disclosure to all the world. Laws are not invalid because they fall short of the maximum of attainable efficiency. Disclosure to all the world, as in Savage *v.* Jones, might make the protection more complete, but it would also make the hardship more severe. Something less, therefore, has been exacted. Disclosure is to be made to the health officers of the city, and to them only. If fraud or other wrong is discovered, then and then only exposure will result. 'NO MAN HAS A CONSTITUTIONAL RIGHT TO KEEP SECRET THE COMPOSITION OF SUBSTANCES WHICH HE SELLS TO THE PUBLIC AS ARTICLES OF FOOD.' IF THAT IS TRUE OF FOOD, IT IS EVEN MORE PLAINLY TRUE OF DRUGS. A danger exists, and the only question is whether the means of correction are appropriate. We cannot say that the means have no relation to the end.
>
> "The public health is safeguarded by disclosure to public officers charged by law with its protection. We are not called upon to approve the wisdom of the ordinance. We stop when we satisfy ourselves that it has a reasonable relation to the end to be attained." [Capitals and small capitals ours.—ED.]

Another argument made by the Fougera concern is that which has been made by the defenders of "patent medicine" interests before, namely, that, by requiring nostrum makers to publish their formula, they would be thus made to give evidence against themselves. THE JOURNAL has before commented on the moral status of a trade which cannot stand publicity—and admits it! In discussing this, the court said:

> "The sale of medicines is a business subject to governmental regulation. One who engages in it is not compelled by this ordinance to expose himself to punishment for any offense already committed. He is simply notified of the conditions upon which he may do business in the future. He makes his own choice. To such a situation, the privilege against self-accusation has no just application."

The objection made by the Fougera counsel, also, and one of the stock objections, it might be said, of the "patent medicine" fraternity, that prosecution for misstatement of therapeutic action would be the infliction of punishment for "mere error of opinion" was likewise dismissed by the court as inadequate. So, too, was the alleged objection that the ordinance would conflict with the federal constitution. On this the court's opinion was summed up in the statement:

> "The dominant scheme of the ordinance is disclosure of ingredients. That disclosure may be compelled, and the failure to make it punished, without trespassing upon the field which has been occupied by Congress."

From the foregoing it would seem that, while the "patent medicine" interests profess to see in the finding of the court a victory, the victory in fact, rests with the Law Department of the City of New York. The underlying principle of the ordinance was the right on the part of the city to compel disclosure of ingredients. That right the Appellate Court upholds. Further, practically every other objection to the ordinance that was raised by the expensive and impressive array of legal talent employed by the "patent medicine" interests, was dismissed by the Appellate Court as "inadequate"; finally the one weakness which made it necessary for the court to hold the ordinance void, is, as the court records, "one that amendment may correct."

Correspondence

WILL AMERICAN MUNICIPALITIES PROFIT BY EXPERIENCE?

To the Editor:—Now is the time for American small municipalities to rise and demand health protection and pay for it. Thousands of able, educated, experienced young medical officers from the Army, Navy and Public Health Service will soon be discharged or will leave by resignation. Give these young, able men a chance to work as paid health officers in each community of, say, 5,000 inhabitants and above. Pay them living salaries and make them independent from the start. Place them in groups under older officers as supervisors, and let the U. S. Public Health Service do the general supervision and direction of the work so that uniform and advanced procedure may be maintained. Establish suitable, perhaps small, but still well equipped laboratories in some centrally located larger city for bacteriologic and biologic work, and place an efficient officer in charge. Build hospitals.

Have an adequate staff of nurses on hand, not only to supervise the school hygiene, but also to visit and instruct families in their homes, and detect overcrowding in the slums of the city. Arrange self-sustaining, sanitary boarding houses for single men and women; protect the children from the evil influences of star boarders and the like. Segregate tuberculous subjects. Have a social welfare committee regularly appointed and managed by Red Cross staffs to teach the American way of clean living to the foreign born and to see that pure air and, in winter, heat is supplied the needy, and see that the children are properly clothed. Give the American public the benefit, the experience for which they had to pay so dearly. "Americanize the foreigner," by paying more attention to his welfare.

J. F. C. Luhan, Ph.G., M.D., New York.
Acting Assistant Surgeon, U. S. P. H. S.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

EXPERIMENTAL NATURE OF INFLUENZA VACCINES

To the Editor:—Can you give me anything definite as to the consensus of opinion of physicians in private practice with reference to the prophylactic and therapeutic vaccines in influenza? My own experience in several hundred cases seems to demonstrate their value, but our health officer has publicly announced that all preventive inoculations are useless. H. A. Vennema, M.D., Menominee, Mich.

Answer.—An editorial in The Journal, Oct. 26, 1918, after describing the two main types of vaccine now being used in this epidemic said:

> It will require many more carefully elaborated and controlled observations before anything definite may be learned in regard to the effect of these vaccines, and it is probably safe to say that nothing on which to rely in the future can be learned from the indiscriminate vaccination now going on. There is, therefore, no basis on which promise of protection from vaccines may be made. They may be harmless, and they may or may not be of preventive value.

In other words, at the time the editorial was written, the use of such vaccines was wholly in the experimental stage. Up to the present time there have been published, so far as we know, but two definite reports of adequately controlled experiments on the use of the vaccines. The first of these, that of Barnes (The Journal, December 7, p. 1899), concerned the use of the Leary vaccine, composed of strains of the influenza bacillus. This work indicated that the vaccine was not of prophylactic value. At the same time practically all of the recent bacteriologic work indicates that the influenza bacillus does not bear a causative relation to the present epidemic.

The second report, by G. W. McCoy, V. B. Murray and A. L. Teeter (The Journal, December 14, p. 1997), concerned a carefully controlled experiment on the use of a mixed vaccine similar to that brought out by Dr. E. C. Rosenow. The investigation indicates that this vaccine is not efficacious as a prophylactic against the present epidemic.

At this time it may be said that the use of vaccines in influenza is *at best* in the experimental stage, and that carefully controlled experiments exist which indicate that neither of the two main types of vaccines now offered to the profession are efficacious in preventing the spread of the present epidemic.

MARIHUANA, SYNONYM FOR CANNABIS INDICA

To the Editor:—I am told that on the Mexican border the natives make a cigaret out of a plant called Mara Huiwana. The Yaqui Indians are especially noted for this practice, and smoke the cigarets heavily, which results in producing hallucination and intoxication. Will you kindly give me some information concerning this plant? I at first thought it was loco weed, but am now positive that it is not.

F. F. Young, M.D., Covington, La.

Answer.—In The Journal, July 6, 1918, p. 60, in answer to an inquiry regarding this drug we said:

> We can find no reference to "maruhuana" or "marajuana" in available works dealing with drugs. According to Squire's "Companion to the British Pharmacopeia" (Edition 19, 1916) marihuana is a synonym in the Mexican Pharmacopeia for cannabis indica. The same name is also mentioned as a synonym for cannabis indica in "Plant Names," by A. B. Lyons (Edition 2, 1907).

Information received since suggests that the name may be applied to a stramonium plant, and that, as is generally the case, the same name is applied by the public to a number of plants. The symptoms mentioned in the query as being produced by smoking Mara Huiwana or marajuana are similar to those produced by the mescal plant, which was fully discussed in an editorial in The Journal, Jan. 15, 1916, p. 194.

CALCIUM HYPOCHLORITE

To the Editor:—Where can I buy a small quantity of calcium hypochlorite? I enclose clipping from The Journal.

George Martin, M.D., Elk Mound, Wis.

Answer.—The clipping enclosed entitled "Prophylactic Treatment of War Wounds" is an abstract of an article by H. Vincent, *Bulletin de l'Académie de médecine*, 1917, **77**, 136, which appeared in The Journal, March 31, 1917, p. 1009. Vincent gives this formula for the antiseptic powder:

Hypochlorite de chaux titrant 100 à 110 litres de Cl.......10 grammes
Acide borique officinal pulvérisé et bien sec..............90 grammes

The "hypochlorite de chaux titrant 100 à 110 litres de Cl" referred to in the foregoing formula corresponds to the chlorinated lime of the U. S. Pharmacopeia. This is essentially a mixture of calcium hypochlorite and calcium chlorid, and like the product referred to above is required to contain 30 per cent. of "available" chlorin. So far as we know, chemically pure calcium hypochlorite cannot be purchased.

HOME FOR AGED

To the Editor:—I wish to know if there is an endowed home for old men in the United States where care could be had for about $15 or $20 per week. I have a patient 77 years old who is in such condition that he needs a great deal of care and the family cannot pay the $25 per week that the hospitals charge. M.D.

Answer.—The Journal will forward replies to the inquirer.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alabama: Montgomery, Jan. 14. Chairman, Dr. S. W. Welch, Montgomery.

Arizona: Phoenix, Jan. 7. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.

Colorado: Denver, Jan. 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

District of Columbia: *Washington, Jan. 14-16. Sec., Dr. Edgar P.* Copeland, The Rockingham, Washington.

Hawaii: Honolulu, Jan. 6. Sec., Dr. J. R. Judd, Honolulu.

Minnesota: Minneapolis, Jan. 7-10. Sec., Dr. Thomas McDavitt, 741 Lowry Bldg., St. Paul.

New Hampshire: Concord, Dec. 27-28. Sec., Dr. Charles Duncan, Concord.

New Mexico: Sante Fe, Jan. 13. Sec., Dr. W. E. Kaser, East Las Vegas.

New York: Jan. 28-31. Albany, Buffalo, New York City and Syracuse. Mr. Herbert J. Hamilton, Asst. Prof. Exams., New York Dept. of Education, Albany.

North Dakota: Jan. 7. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.

Oklahoma: Oklahoma City; Jan. 7-8. Sec., Dr. J. J. Williams, Weatherford.

Oregon: Portland, Jan. 7. Sec., Dr. H. S. Nichols, Corbett Bldg., Portland.

Pennsylvania: Philadelphia, Jan. 7-9. Sec., Mr. Nathan C. Schaeffer, State Capitol, Harrisburg.

Rhode Island: Providence, Jan. 2-3. Sec., Dr. B. U. Richards, State House, Providence.

South Dakota: Pierre, Jan. 14. Sec., Dr. P. B. Jenkins, Waubay.

Utah: Salt Lake City, Jan. 6. Corres. Sec., Dr. G. F. Harding, 405 Templeton Bldg., Salt Lake City.

Washington: Spokane, Jan. 7-9. Sec., Dr. C. N. Suttner, 415 Old Nat'l Bk. Bldg., Spokane.

Wisconsin: Madison, Jan. 14. Sec., Dr. J. M. Dodd, 220 E. 2d St., Ashland.

Annual Congress on Medical Education and Licensure

The fifteenth annual conference of the Council on Medical Education will be held at the LaSalle Hotel, Chicago, Monday, March 3, 1919. On the following day, March 4, the Federation of State Medical Boards of the United States and the Association of American Medical Colleges will hold their annual meetings.

The discussions at this conference will be of problems arising from the world war, and will include the "Needs of Medical Education Revealed by the War" and such other topics as military training, hygiene, preventive medicine, condensed courses in premedical education, continuous sessions in medical schools, and other related topics. The discussions will be of interest from the standpoint of both colleges of arts and sciences and medical schools.

Among the speakers will be a number of prominent medical officers, presidents of universities and leaders in medical education.

Peking Union Medical School, Peking, China

The Peking Union Medical School was organized by a group of American and British missionary societies and began active teaching about 1906. It was supported by these societies until in 1915 the property was purchased for $200,000 by the Rockefeller Foundation. The control is now vested in the China Medical Board consisting of seven trustees appointed by the Rockefeller Foundation and six by the missionary societies formerly in full control. New buildings have been planned, several of which have already been completed, the curriculum has been revised, a new faculty has been selected, including ten all-time professors, and an ample endowment has been provided. The institution now offers a three year premedical course entrance to which is the completion of the middle school. This premedical course includes instruction in physics, chemistry, biology, English, Chinese and German. The work of the three years are said to correspond with the last year of the best high schools in the United States and the first two years of the best American universities.

The medical course will not begin until September, 1919. It will cover five years and will be followed by a sixth year to be spent by the student as an intern in a hospital. There will be no graduates under these higher standards, therefore, until 1925.

North Dakota July Examination

Dr. G. M. Williamson, secretary of the North Dakota State Board of Medical Examiners, reports the oral, practical and written examination held at Grand Forks, July 2-5, 1918. The examination covered 13 subjects and included 110 questions. An average of 75 per cent. was required to pass. Of the 3 candidates examined, 2 passed and 1 failed. Two candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Rush Medical College	(1903)	75
John A. Creighton Medical College	(1913)	75.1
FAILED		
Chicago College of Medicine and Surgery	(1916)	62

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Illinois Medical College	(1905)	Indiana
University of Minnesota	(1915)	Minnesota

Connecticut November Examination

Dr. Charles A. Tuttle, secretary of the Connecticut Medical Examining Board, reports the practical and written examination held at New Haven, Nov. 12-13, 1918. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 12 candidates examined, 9 passed and 3 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
College of Physicians and Surgeons, Los Angeles	(1912)	75.6
George Washington University	(1917)	78.6
Howard University	(1912)	75.6
University of Maryland	(1917)	78
Tufts College Medical School	(1917)	80.3
Fordham University	(1918)	86.6
Long Island College Hospital	(1918)	80.7
University of Pennsylvania	(1918)	76
University of Rome	(1893)	77.3
FAILED		
Tufts College Medical School	(1918)	70.1, 72.1
Columbia University	(1915)	73.2

Iowa Reciprocity Report

Dr. G. H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports that 1 candidate was licensed through reciprocity at the meeting held at Des Moines, Nov. 12, 1918. The following college was represented:

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Northwestern University	(1917)	Missouri

Book Notices

Psychology and the Day's Work. A Study in the Application of Psychology to Daily Life. By Edgar James Swift, Professor of Psychology and Education in Washington University. Cloth. Price, $2 net. Pp. 388. New York: Charles Scribner's Sons, 1918.

There is nothing more interesting than the human mind; and though we realize at times its influence on the most intimate details of our daily existence, we seldom stop to take account of the fact. As Swift says in his opening sentence, "Man's response to situations in the day's work is the measure of his efficiency." This book is not the typical dry as dust text on psychology, but all of the author's points are illustrated by anecdote from experience and from extensive literature which makes the book extraordinarily entertaining.

The first chapter, on organization for mental efficiency, gives attention incidentally to the various medical cults, the psychologic blunders of the German authorities, the penal system, the life of Al Jennings, the noted bandit, and of Patrick Henry, the noted lawyer, and to efficiency in public health. The second chapter concerns thinking and acting. This chapter describes the beginnings of numerous great inventions and the thought that led up to the discoveries. Especial attention is given to the habits of mind of the vivisectionists, and the author shows particularly the "power of empty words to cajole the human mind into placid assent in the conviction that it is thinking."

In the third chapter the author considers habit in the preparation for efficiency, discussing the theory of the formation of habit, the value of habit and its influence for perfect, as well as against perfect, efficiency. Special attention is drawn to the difficulties which great thinkers or discoverers have had in changing the point of view of contemporary men; for example, Harvey with the discovery of the circulation; Benjamin Franklin, with his work on electricity; Oliver Wendell Holmes, with puerperal fever; and incidentally, Galvani, Couvier, La Voisier, Young and Plenciz.

The fourth chapter, on the psychology of learning, relates mainly to the credulity of the human race, the teaching of animals, and the adoption of method, particularly the learning of the touch system of typewriting and the study of golf.

The fifth chapter is on fatigue and its psychology; the sixth, on curiosities of memory, in which especial attention is given to lightning calculators, what occurs in the mind during drowning, crystal gazing, hypnotism and also the training of the mind for permanent memory. Here especial attention is given also to the question of rapid, intensive or prolonged, careful study. The next chapters concern memory and its improvement and then testimony and rumor, the latter devoted especially to legal conditions. The ninth chapter, entitled "Our Varying Selves," is a psychologic study of personality, special attention being given to Kaiser Wilhelm; also to President Wilson, and to numerous characters from literature. The final chapter, on the physiology of digestion, describes the work of Pawlow, discusses the work of Carlson and then considers the general aspects of the influence of the mind on the stomach and vice versa.

The book contains numerous aphorisms which are worthy of especial consideration; for example:

> Experience is a filing-case from which man draws reports from his past life.
>
> Every experience is a scientific experiment reduced to its lowest terms.
>
> Unorganized knowledge is *only* wayward information, unfitted for application because incapable of being combined into a single impulse leading toward a definite conclusion.
>
> It is characteristic of the human mind to be attracted and impressed by the unusual or sensational and to fail to notice events that are daily occurrences.
>
> The basis of a good *memory* is to discover valid relations, such as those of time, place, similarity and dissimilarity, cause and effect.
>
> Experiments have proved that in general when the average man reports events or conversations from memory and conscientiously believes that he is telling the truth, about one fourth of his statements are incorrect.

The book is one that will pay every physician to read. Too many of us fail to appreciate the practical value of an understanding of the mental processes of the ordinary human being.

Medicolegal

Slight Evidence Suffices for Affirming Conviction of Manslaughter Through Malpractice

(State v. Young (N. J.), 103 Atl. R. 173)

The Court of Errors and Appeals of New Jersey, in affirming a judgment of the supreme court, which affirmed a judgment of conviction of the defendant of manslaughter for causing the death of a woman through malpractice in the performance of a surgical operation on her, she having died on the operating table, says that the argument, elaborately and forcefully addressed to the court of errors and appeals by counsel for the defendant on the merits of the case, could not properly be considered here, where the court deals exclusively with the legal questions presented by the record. It might very well be that the testimony tending to establish the guilt of the defendant was of such meager and attenuated character that, tested by a strict analysis, it was not clearly convincing of the guilt of the defendant; and even though it might appear to the court of errors and appeals that on a motion for a new trial in the trial court such a motion might properly prevail, nevertheless such a situation afforded no legal ground for disturbing the verdict in this case, so long as there was some testimony, no matter how slight, tending to support the finding of the jury. It is only when there is no testimony to support a verdict, and a motion is made for a direction of a verdict of not guilty, and such motion is refused, that such refusal may be properly assigned as error, reviewable here.

In the trial court one of the points made in behalf of the accused was that the removal of two parts of the smaller intestine together with the larger intestine could not possibly have been accomplished with the instruments that were alleged to have been used by the defendant in performing the operation. On the other hand, there was testimony tending to show that, in fact, there was no disturbance of the abdominal tract after death, and that when opened its contents were gone; and there was the testimony of every medical expert, except one physician, that they could not have been removed by the use of the instruments exhibited. The legitimate inference from all this would be that the contents were removed before death, and by some instruments other than those exhibited. On the other hand was the defendant's claim that, in fact, the removal of the contents had occurred after death. The jury evidently adopted the view that the contents were removed before death and by some instrument or instruments other than those exhibited. There was evidence on which to base such finding, and hence it would have been improper for the trial judge to charge, as requested, that there was no evidence whatever to show that any other instruments were used.

Insurer Cannot Be Sued for Malpractice

(Bowers v. Gates et al. (Mich.), 166 N. W. R. 880)

The Supreme Court of Michigan, in this action in tort for alleged malpractice brought against defendant Gates and an insurance company, reverses an order which denied a motion in the nature of a demurrer which the company made asking that the action be dismissed as to it. The court says that, as disclosed by his declaration, the sole tort charged by the plaintiff was that of malpractice inflicted on him by defendant Gates while professionally employed as his physician and surgeon to care for a fractured leg and ankle. The declaration contained two counts. The first one was against defendant Gates for malpractice, directed and exclusively devoted to his alleged lack of skill, malfeasance, and neglect while professionally attending the plaintiff as a physician, and the damaging consequences that the plaintiff experienced. The second count recited that the insurance company had by a described obligation in writing covering the period during which the plaintiff was under the treatment of defendant Gates contracted to hold the latter harmless against claims for damages, etc., wherefore the plaintiff was entitled to recover from the defendants his damages. The contract by virtue of which the plaintiff sought to make the company a party to this action was an ordinary one of indemnity insurance, headed "Physician's Liability Policy," by which the company contracted with defendant Gates to indemnify him against loss for liability imposed on him by law for damages on account of bodily injuries or death suffered by any person or persons in consequence of any malpractice, error or mistake made by him in the practice of his profession, or of any assistant aiding him in the administration of medical or surgical treatment, during the term of the policy. But, as to all the contractual obligations in the policy, the difficulty in seriously considering the plaintiff's theory was that he was in no sense a party to the contract or to the consideration for it. He was a stranger to it, and there was no privity of contract between him and the company issuing the policy. The insurer made no promises to him, did not know him in the transaction, and assumed no obligation for his benefit. Any right of action which might arise out of this engagement was vested in the person to whom and with whom the promise, or contract, was made. No statutory provision and nothing in the contract gave the plaintiff any right of action in tort, or otherwise, against the insurer of the alleged tort-feasor or wrong-doer. The law on that subject is elementary in principle. Nor did the company in fact or effect intervene and become a defendant in appearing, represented by the same counsel who appeared for defendant Gates, and taking on itself the burden of his defense pursuant to its contract with him.

Pneumatic Ambulatory Splint Malpractice

(Vander Wal v. Abbott & Wilcox et al. (Iowa), 167 N. W. R. 182)

The Supreme Court of Iowa in affirming, in this case "not to be officially reported," a judgment for damages for alleged malpractice by the defendants in the reduction and treatment of a fracture of the plaintiff's left leg, says that there was exacted, as the jury was told, that degree of knowledge, skill and care ordinarily had and exercised by the average of the profession in that or similar localities, having regard to the improvements and advances in their profession at the time. The contention of the plaintiff was that the defendants fell short of this measure of skill and care in several respects, and the sole issue presented was whether the evidence was such as to make out a case for the jury. The fracture was an impacted one at the base of the neck of the femur, and extended in an oblique line. It appeared to have extended from the greater trochanter down to and past the lesser trochanter, with a spiral fracture accompanying it below. A pneumatic ambulatory splint was made use of. The entire apparatus was approved by the experts who testified. The fault found was with the manner of the use of the apparatus, the adjustment thereof to the plaintiff's leg, and the attention given thereto. The plaintiff contended that the splint was not adjusted to the leg as it should have been, in that a bolt holding together the upper parts was left out when the bones were set, and the laces of the shoe were loosened, so that the splint did not hold the parts together, so as to be immovable. One of the defendants denied that the bolt was out when he called, but admitted to loosening the lace of the shoe, and asserted that he had drawn the buckle over the foot a notch tighter, which offset the change in lacing. The other defendant, on calling after about thirteen days' absence, remarked, according to the plaintiff, that the leg did not look good to him, and then inquired, "Who unloosened this strap?" and was told that it was done by his partner. Then he inquired, "Where is that screw?" and when told by the plaintiff that it was never in there, put his hand into his vest pocket, remarking, "Here it is; I forgot to put it in; . . . this is one of the essential things" to keep the leg stretched; and he put the bolt in with a screwdriver. The court sets out other evidence, but it says merely enough to show whether the bolt was in place, and whether the shoe was unlaced so as to leave the splint loose was an issue for the jury. And that body was warranted in finding from the evidence that leaving the bolt out or unlacing the shoe would have been improper practice. Evidence in behalf of the defendants tended to show that the instep was very high, and that there was a contraction of the tendon on the bottom of the foot which tended to draw the foot inward, and it rotated slightly inward. Another physician testified that if the splint had been properly adjusted, and kept adjusted, "you would not expect any disalinement of the foot"; and another one, that "when you have to refracture a limb, you do not usually get as good result." From this evidence the jury might have found that the defendants were negligent in omitting to adjust properly and keep adjusted the splint on the plaintiff's leg in that the bolt was omitted and the lace unfastened, thereby loosening the apparatus from the leg so as not to retain it in alinement, and that in consequence the leg was broken again, causing the plaintiff great pain and suffering. This pain and suffering furnished a basis for damages, even though the result may have been good. But there was evidence tending to show that there was a shortage of the left leg greater than ordinarily results from the setting of the fractured femur, for, though the physicians may have measured, the plaintiff stood in the presence of the jury, and with books under the short leg indicating its condition, the jury might have found from such demonstration that the leg was considerably more than 2 inches shorter than the other leg. That some of the facts may have been established by nonexpert testimony was not objectionable.

Not Barred from Testifying in Insanity Inquest

(In re Harmsen (Iowa), 167 N. W. R. 618)

The Supreme Court of Iowa, in affirming a judgment confirming a finding of the commissioners of insanity of Story County that the appellant was insane and a fit subject for custody and treatment in the hospital for the insane, holds that it was not error to permit a physician to testify to matters concerning which he acquired knowledge while the appellant was in his retreat and being treated by him. The court says that protection was sought by the appellant from this testimony under Section 4608 of the Code of 1897, prohibiting physicians and surgeons from giving testimony concerning matters of which they obtained information in that capacity. The inhibition relates to communications properly intrusted to the physician in his professional capacity, and necessary and proper to enable him to discharge the functions of his office according to the usual course of practice or discipline. This, however, does not disqualify a physician from testifying as to the mental condition of the patient whom he has attended as he observed it, even though he attended him professionally. The court adds that no communications seemed to have been made to this physician by the appellant as patient to physician. Nor does the court consider that another physician was barred from testifying, in whose case it appeared that he had never been called to treat the appellant professionally, but for twenty-five years had been a member of the commissioners of insanity, and was a member of the commissioners at the time the appellant was examined by the commissioners, and detailed what was said by the appellant at that time and what he observed at that time.

Employer Not Liable for Malpractice

(Congdon v. Louisiana Sawmill Company, Limited (La.), 78 So. R. 470)

The Supreme Court of Louisiana says that the plaintiff sued to recover $5,000 damages against the defendant, and, for cause of action, showed that, while he was in the employ of the defendant, he sought the medical aid of "the sawmill physician of said company" to remove a wart that was on his back, and which had been a source of annoyance to him for some time; that, in endeavoring to remove the wart, the physician applied an acid negligently, poured it on the plaintiff's naked back, and it circled around his body, consuming skin and flesh in its course; that the physician, through negligence or lack of proper knowledge and skill, utterly failed to relieve the plaintiff, etc. In affirming a judgment dismissing the plaintiff's suit at his costs, because he failed to state a cause of action in his petition, the court holds that when an employer employs a physician or surgeon of ordinary skill and ability to attend to his employees, and pays the physician from a fund collected from the employees and from which fund the employer derives no profit, he is not responsible in damages to an employee for mistakes of or malpractice by such physician, particularly, when it is not charged and proved that the employer was negligent in the selection of the physician. A petition for damages in such case should contain allegations of neglect on the part of the employer as to employing a competent physician, and that he derived some profit from the fund contributed by the employees to pay the physician. In the absence of such allegations, the petition discloses no cause of action.

Society Proceedings

COMING MEETINGS

Society of American Bacteriologists, Boston, Dec. 30-Jan. 1.

AMERICAN PUBLIC HEALTH ASSOCIATION

Forty-Sixth Annual Meeting, held in Chicago, Dec. 8-11, 1918

The President, DR. CHARLES J. HASTINGS, Toronto, in the Chair

The Etiology of Influenza

DR. WILLIAM H. PARK, New York: We concluded that whether or not the bacillus of influenza was the initiating cause of the present epidemic, it gave evidence that it has a marked pathogenic action, and this seemed to be sufficient reason for us to make a thorough trial of an influenza bacillus vaccine on the prevention, if not of the pandemic, at least of a number of the cases of infection with this bacillus.

The problem of producing immense quantities of vaccine, of determining the best dosage, the time for immunity, if any, to be established, of getting the proper controls in communities not yet infected, and above all of keeping good records and gathering and analyzing them, is one of the most important and staggering of problems.

We began the use of the influenza vaccine after the pandemic had already started, and some groups were not vaccinated until after the peak of the pandemic had been passed; so unless we have been able to get sufficient control cases, that is, presumably susceptible unvaccinated persons, exposed to the same degree, and observed at the same time as the vaccinated persons, we could arrive at no conclusion with regard to the efficiency of the vaccine. The reports from the use of the vaccine are being analyzed now, and it is already apparent that the majority of them are lacking in many essentials.

The intelligent use of the vaccine might have given us strong evidence in regard to the etiologic relationship of the influenza bacillus to the present pandemic; as it is, unless the finished reports prove to be better than they now promise, we must wait for such evidence as may be gathered from a serologic study of the various strains of the influenza bacillus isolated by us from the typical cases and from control cases.

DISCUSSION

DR. E. O. JORDAN, Chicago: In the present outbreak of influenza, conditions have been very different from those of which I have record. Instead of 8 or 9 per cent. of the deaths occurring between the ages of 20 and 40, over 60 per cent. have been of persons between the ages of 20 and 40. Where we find a similar bacteriologic picture in the true respiratory tract infections, it seems fair to suppose that neither the Pfeiffer bacillus, the pneumococcus nor the various varieties of streptococci are responsible alone for these outbreaks. We have in cases of pandemic influenza an infection with an unknown or unrecognized virus which increases the susceptibility of the individual normally to infection with the various pathogenic respiratory tract organisms, and superimposed on the initial infection we have a variety of secondary infections.

DR. J. W. NUZUM, Chicago: As regards the use of vaccines in influenza, we have seen some cases of the disease developing after the first injection of the vaccine, and we know of instances occurring after three injections of the vaccine; but we do not care to venture an opinion until we have been able to do considerable control work.

We have been impressed with the frequency of empyema in these cases. In our wards at the Cook County Hospital we have had from fifty to a hundred cases with empyema, and the predominating organism is the hemolytic streptococcus, a late secondary invader.

Dr. William H. Stokes, Baltimore: We have found the streptococcus and the pneumococcus, Types II and IV, in about 10 per cent. of the cases, both at necropsy and in the sputum; we also found the influenza bacillus.

Lieut.-Col. James G. Cummings, Washington, D. C.: In a series of 100 specimens, we have found only 12.4 per cent. of influenza bacilli. In 27.6 per cent. we have found the hemolytic streptococcus, in 90 per cent. Group IV pneumococci. We have found a low percentage of the fixed types of pneumococci. We have likewise found about 20 per cent. of *Micrococcus catarrhalis,* and a few staphylococci.

Dr. Ludvig Hektoen, Chicago: I think we must be dealing with a disease of unknown etiology, complicated by secondary infections of different kinds depending on local conditions in different parts of the country.

Dr. M. J. Rosenau, Boston: In the first twenty-six or more necropsies we recovered the influenza bacillus described by Pfeiffer in 83 per cent. of the cases examined. We also found it in pure cultures in the lungs of the fatal cases in a number of instances. In the remaining 70 per cent. fatal pneumococcic cases we failed to find the influenza bacillus. These patients died of croupous pneumonia due to Types II and IV of the pneumococcus, and in a few instances of the hemolytic streptococcus.

Dr. William C. Woodward, Boston: What has been the prevalence of the various kinds and strains of streptococci and pneumococci in the civil population prior to the appearance of influenza, and what has been the relative prevalence of these particular organisms among groups of persons in infected communities who have not had the disease?

Dr. William D. Stovall, Madison, Wis.: Unless a vaccine is made by growing the type in pure culture and mixing the types according to the organisms present, a vaccine of definite value probably cannot be obtained, because the mediums favorable to the growth of the pneumococcus cannot be favorable for everything. One type may overgrow the other. If they are grown in pure culture one may get definite effects from each type.

Dr. H. W. Hill, St. Paul: There is a prevalent belief among a great many people that relatively few tuberculous persons have escaped influenza. I should like to know the experience of the members in regard to tuberculosis and influenza.

Dr. J. O. Cobb, U. S. Public Health Service, Chicago: At Fort Stanton, N. M., they have had a very decided outbreak of influenza, with 149 cases out of 300 tuberculous patients, with 18 per cent. of deaths. The cases are identical with our present epidemic, and the patients died just as promptly at the government sanatoriums there as they did elsewhere.

Dr. William H. Park, New York: In the East we have had very little influenza complicated by empyema, but in different parts of the country there have been important and different secondary complicating organisms. In our own hospitals in the East we have only had one case of empyema in some sixty deaths.

As to the prevalence of the influenza bacillus in the cases prior to this outbreak over other organisms, I will say that the influenza bacillus has been present in the East in a great many cases in this epidemic. Every person with whooping cough seems to have the influenza bacillus.

Prophylactic Inoculation in Pneumonia and Influenza

Dr. Edward C. Rosenow, Rochester, Minn.: By the use of a properly prepared vaccine it is possible to afford a definite degree of protection for individuals, including pregnant women, during an epidemic of influenza. There is no noticeable increase in the number of cases immediately following the inoculations, and protection lasts for a period of at least six weeks. The favorable results from inoculations indicate that these so-called secondary invaders, which appear to have exalted and peculiar infecting powers, bear a close etiologic relation to epidemic influenza. This relation, however, may be in merely favoring the invasion of an unknown virus. Nearly all physicians report that the attacks of influenza are milder and of shorter duration, and that convalescence is more rapid in inoculated patients as compared with uninoculated individuals. The tendency of infection of the lower respiratory tract to develop pneumonia is noticeably less in the inoculated. According to the evidence at hand, the prophylactic vaccinations have conferred a decided immunity in pregnant women. This infection has proved very fatal among the uninoculated of this class.

DISCUSSION

Dr. George W. McCoy, Washington, D. C.: See the article on "The Failure of a Bacterial Vaccine as a Prophylactic Against Influenza," The Journal, Dec. 14, 1918, p. 1997.

Dr. Timothy Leary, Boston: In the treatment of influenza with an autogenous vaccine of mixed strains of influenza bacilli grown on human blood agar, we started on a local piece of work with our students and nurses in certain institutions which were receiving the first cases of influenza, and in which the incidence and mortality were very high. The results indicated definite value, and we proceeded from that to offer the vaccine for immunization to physicians and nurses generally. Again, the reports came back distinctly favorable, and if the agent is of definite value it seems to me that its use should be spread. We have as yet no definite information on which to draw final conclusions.

Dr. F. O. Tonney, Chicago: The ratio of influenza patients developing pneumonia in the unvaccinated of industrial groups studied was 1 in 21, while in the vaccinated it was 1 in 184. The ratio of influenza cases terminating fatally in the unvaccinated of the industrial groups in Chicago was 1 in 408, and in the completely vaccinated there were none in the 1,201 cases reported.

The influenza in vaccinated individuals occurred almost exclusively in those who had received one vaccination. No bronchopneumonias or deaths occurred in the vaccinated group after the second or third vaccination. The number of severe local reactions following vaccination was at the rate of 3 per thousand, and of severe constitutional reactions at the rate of 2 per thousand. These results are incomplete, but we offer them for what they may be worth.

Dr. J. J. Moore, Chicago: We have found hemolytic streptococci in the sputum, bronchi, lungs and especially, as Dr. Nuzum has said, from the pleural complications of this disease.

Dr. W. O. Sherman, Pittsburgh: At the Homestead plant, there were 1,687 of the employees who were not inoculated; 588 of those, or 30 per cent., contracted the disease. The number of deaths was forty-two, a percentage of 2.5. There were 5,964 who received one inoculation; of these, 213, or 3.5 per cent., developed the disease. There were nine deaths among these, or a percentage of 1.5; 5,222 received two inoculations, and 174 developed the disease, or a percentage of 3.2 with four deaths. The death rate was 0.08. There were 4,720 that received three inoculations; sixty-six of these, or a percentage of 1.4, contracted the disease. There were no deaths in those with three inoculations. There were 4,007 who received four inoculations at the one plant, and these data are accurate; 108, or 2.8 per cent., contracted the disease, and there were two deaths, giving a death rate percentage of 1.05.

Admiral E. R. Stitt, Washington, D. C.: We have been successful at the Naval Hospital, as they have in Boston, in treating postinfluenzal pneumonias with the serum of convalescents, and a very interesting thing in connection with trying out the serum of some of the convalescents is the potency of the serum therapeutically. It seemed to be almost a specific. I had the laboratory workers in the Naval School try out immunity reactions with this potent serum, which we knew was potent from treating different cases. There was no evidence that this serum possessed any antibodies for various strains of influenza bacilli.

Col. Victor C. Vaughan, Washington, D. C.: Before a barracks was built for the accommodation of our soldiers, Surgeon-General Gorgas understood thoroughly that the diseases we should have to deal with would be the respiratory diseases, as we call them. It is not generally known, but it is true that of all the diseases that General Gorgas had to deal with on the Canal Zone, neither malaria nor yellow fever was the most difficult. It was pneumonia. He knew how to prevent yellow fever and malaria, but he did not know how to take care of pneumonia. Three of us, with Surgeon-General Gorgas, went to the Secretary of War before there was a barracks built, and we told him that the diseases we should have to deal with would be pneumonia and kindred diseases, and we asked that sufficient space be provided in barracks for the men. The Secretary of War was highly appreciative of what we said and ordered it done. I want to say that with respect to crowding in our armies, I have come to realize that in the Army, especially in our camps, crowding in barracks is of very little importance compared with crowding under other conditions. When men are in the barracks and are asleep, they are not coughing, they are not sneezing, or doing anything of that kind. Most of them are asleep. It is when they are assembled in a large hall that trouble comes. At Camp Forest there were 9,000 people in a hall, for instance, and if every individual was perfectly upright, inclining his head neither forward nor backward, and the noses of these people were within 16 inches of one another, that being the greatest distance laterally, or 26 inches, with coughing and sneezing violently, you can readily understand what the condition of the atmosphere must have been, and it would have made but little difference if that building had had no roof and no walls to it. You can crowd men oudoors, and while they are outdoors you can crowd them just as much as when they are indoors; and I must say that this was something I had never thoroughly appreciated.

One word with reference to pneumonia, before we come to influenza: We had a splendid record for the first six months of the war. We had a death rate but little above that of the same age group at home; and thirteen out of the twenty-nine large cantonments had a death rate lower than the same age group at home. The Illinois division at Waco, Texas, had a death rate in the first six months of the war of less than one half of what occurred during the same time among the same age group in the city of Chicago, because they were selected men. You remember that the infectious diseases, especially the respiratory diseases, kill 40 or more per cent. men than women, and all these were men. So it is a wonderful record, and the same is true of New York, Pennsylvania, Ohio and various other organizations.

So far as pneumonia is concerned, during the first six months these facts seemed to be established so far as figures can establish anything: The city boy lived, the country boy died; the Northern boy lived, the Southern boy died. Whether these two are exactly the same or not, I do not know. Of course, the rural population is greater in the South.

Influenza—clinical influenza—struck our camps last February. It has been written up by Major Soper, and the report was published before the present epidemic of influenza came. It possessed all the clinical features of influenza that have existed this fall. At Camp Forest it came as it came on Camp Devens last fall, like a thunderbolt out of a clear sky, and prostrated a large number of people, and it was not followed by pneumonia. There were no deaths. Normally deaths did not increase as a result of it. We were on the outlook for influenza all the while. The first intimation we had in the Surgeon-General's Office of influenza's threatening this country came in August. A steamship on its way across the ocean from France was struck by influenza, and it was so badly hit that all of the seamen were prostrated and it had to put into Halifax before it could proceed to New York. We had that warning in August, and when this steamer reached New York it was thoroughly disinfected, and all this time this procedure was carried out at New York and Newport News: All troops ordered to France were sent to Hoboken and to Newport News and held in quarantine fourteen days. Every man was examined and his temperature taken once every day. No man with any elevation of temperature was allowed to go on board. As the men went on the boat in single file they were examined; the examinations were made daily, and if the men were found with elevation of temperature or signs of illness they were sent back home. We were looking for influenza of the virulent type at Newport News and New York, but influenza did not occur in New York, nor did it come into New York; it came in Boston. It may be a mere coincidence, there may be something more in it, but the influenza in 1899 entered the port of Boston. I think I can say with reasonable certainty that this influenza epidemic came into Boston Harbor, was landed at the Commonwealth Pier, struck Boston and Camp Devens only a few miles from Boston, spread from Camp Devens all over the country, and has traveled rapidly ever since. There cannot be any question as to how influenza travels; it travels on two legs, and man is the carrier.

I went to Camp Devens as soon as the epidemic was reported, and I might say that I thought my eyes would never see such horror as I saw there. I went through the Spanish-American War; I saw thousands and thousands of cases of typhoid fever, but I never had anything so depress me as the conditions that existed at Camp Devens.

Unfortunately, it has been almost impossible for us to study influenza. Why? Because men were dying from pneumonia, and we cannot spend the time to examine the blood of patients with influenza when so many people are dying from pneumonia. We are going to have influenza with us; it is not going to disappear very soon. I do not want to be a pessimist; I am always an optimist.

The second year of the epidemic of 1899 showed more deaths from influenza than the first year, and we are going to have the influenza epidemic for some time to come. Let us make a study of influenza as well as of pneumonia. Let us find out what is the cause of influenza. If I were asked to define influenza, I should say it is a disease of unknown origin, characterized by a marked leukopenia, and I am sorry that that has not been studied more carefully. As a result of the leukopenia the gateways of invasion are open, and any micro-organism that is lying around may invade the lungs if it is capable of growing and multiplying there.

So far as pneumonia is concerned, I am convinced that any micro-organism that will grow and multiply in the lungs may cause pneumonia. It is not the pneumococcus or streptococcus alone; it is not the Pfeiffer bacillus or the Friedländer bacillus alone. Any organism that may grow and multiply in the lungs will cause pneumonia. One man who studied pneumonia at Camp Devens came to the conclusion that the influenza and pneumonia were due to the Pfeiffer bacillus. Another man equally competent who studied it here at Camp Grant said it was due to a pneumococcus; another man studying it somewhere else said that it was due to the streptococcus, and so on. We can say, I think, with a great deal of certainty that influenza is very much like measles in this respect. It takes away resistance; and the organism that takes advantage of this is the prevailing organism in that community. We have streptococcus pneumonia; we have Friedländer's bacillus pneumonia, and so on. It has been observable all the way through this epidemic, and it has been mentioned in other epidemics of pneumonia following influenza, that it kills the strongest and most vigorous. Typhoid fever is more prevalent in men than in women and more prevalent in young women than among old men, because those people have the greatest range of activity. The man who is in a hospital, or the man who is on scout duty, is drinking water here and there. The greatest mortality was highest among the strongest and most vigorous because these have the greatest range of activity.

The death rate is higher in the civilian population between 20 and 40 years of age. Of course, in the Army we have only those between 20 and 45 years of age, and we have most susceptible material. We have been trying to find out what we could about this, and we calculate that these figures may not be exactly right. In Richmond, Va., for example, of the inhabitants between 20 and 40 years of age, there was one in six times as many deaths as had occurred. So we compared the death rate of all the inhabitants between 20 and 40 years of age with the death rate in the civilian population according to the number of those between 20 and 40 years of age. Here is the point: These diseases find suitable material between 20 and 40 years of age. I did not quite believe this, and there is an easier explanation than that. I think it is like typhoid fever, and that is, people between 20 and 40 years of age herd together, and on the whole the people who crowd together are the people between 20 and 40 years of age, either in military or civilian life. I want to exclude the possibility that there may be greater susceptibility at that age. Some say the older people have had it, and have asked why the younger people do not have it more. I will not go into that phase of the subject.

In the civilian population there are going to be recrudescences of it. Whether there are going to be recrudescences in the camps or not, I do not know. From a scientific standpoint, it is unfortunate that our camps are soon to be dissolved. We should like to know about this. We have been trying to distinguish between relapses and recurrences. We find a small number of people who have had influenza without pneumonia, who have thoroughly recovered, who have been apparently perfectly well from two to three weeks, and then they have come down again with all the original symptoms just as though they never had it. There is a larger number who think they have not entirely recovered. These were relapses, and we are trying to distinguish between recurrences and relapses. You cannot put any trust at all in the figures. In some places they call everything influenza if a man sneezes once or twice. In other cases they call it influenza pneumonia. In one camp there was an order that nothing should be called influenza unless the Pfeiffer bacillus was found, so we cannot tell how many cases existed in any camp in the United States. We can give the figures as they are put in, but we cannot tell what the percentage of influenza cases with pneumonia was. One thing that is certain is death. The diagnosis of death is certain. There is no question about that. We are figuring out that a certain percentage in this cantonment or this camp, etc., died.

So far as the prevention of the respiratory diseases is concerned, we do not know anything more than our ancestors knew a hundred years ago, and we may as well admit it. I say that in the face of the greatest pestilence that has ever struck our country we are just as ignorant as the Florentines were with the plague described in history. Now that the war is over and we have whipped the Hun, it devolves on the medical profession to work hard over the respiratory diseases, and see what we can do for them, and we must not stop until something of great value is done.

Dr. J. O. Cobb, Chicago: We should like to hear the incidence among the vaccinated in the Army with lipovaccines.

Col. Victor C. Vaughan, Washington, D. C.: We have tried with the greatest thoroughness the vaccines for influenza. We have used influenza vaccine in great quantities, all they could make in the Army Laboratory, and have used all that Dr. McCoy could spare, and also have used that which Dr. Park has furnished us from the New York laboratory, and I do not hesitate to say that it has not done one bit of good. Speaking on this point with the evidence of the Pfeiffer bacillus not being the cause of influenza, I can agree with those who have spoken. To me the evidence that the Pfeiffer bacillus is the cause of influenza is not at all convincing, because, in the first place, it is by no means constantly found in the influenza or the sequelae. In the second place, it is often even with greater frequency found in other diseases than it is in influenza. In the third place, influenza is characterized by a marked leukopenia, a matter that must be investigated more thoroughly. Injection of the Pfeiffer bacillus causes a leukocytosis, just the opposite, so I think the weight of evidence at least is against the Pfeiffer bacillus as being the cause of influenza. Besides, the first evidence that we had in the Army that virulent influenza was spreading through the world was the news we got in August that during the month of July influenza was exceedingly deadly in Germany. It was rife in Germany and caused a very high death rate. In July two conferences were called, one at Berlin and one at Munich, and Pfeiffer himself could not demonstrate in a large number of cases the Pfeiffer bacillus, and as you know, the general finding was a diplopneumococcus.

So far as vaccination against pneumonia is concerned, we have encouraging results, not, however, overwhelming, but encouraging results, concerning vaccine for pneumonia. At Camp Upton last year some 12,000 out of 30,000 men were vaccinated with lipovaccines of Types I, II and III. They were under observation six or eight weeks, after which they went overseas, and there was much less pneumonia among them. The report has been published by Major Cecil and Major Austin, and it was less during that six or eight weeks than it was among the unvaccinated. Since August, Major Cecil has vaccinated 80 per cent. of the troops at Camp Wheeler, about 15,000 or 16,000 troops altogether. He has vaccinated 80 per cent. of the troops that have been coming in all the time. They began at Wheeler with 4,000; then they came in bunches of several hundred. The latest report I had from Major Cecil, a day or two ago, was to the effect that there was practically the same number of cases of pneumonia among the vaccinated as among the unvaccinated; in other words, that there was just as much pneumonia among the 20 per cent. unvaccinated as there was among the 80 per cent. vaccinated. The pneumonias that did prevail were altogether of Type IV.

I agree that we should approach this subject with an open mind, ever ready to accept facts; but let us know they are facts before we accept them.

When it was decided to try vaccination, it was perfectly understood that this vaccination is not compulsory, and that every time an individual was vaccinated or had to be vaccinated he should be told that it is not compulsory. We have said to the men, "You can do as you please; we do not know whether it will protect you against influenza or pneumonia or not. It is an experiment." There is no compulsory vaccination at Camp Wheeler or anywhere else for pneumonia or influenza. There is compulsory vaccination for typhoid fever, but we are not justified in making any vaccination compulsory until we have overwhelming evidence of its value; and any man, whether he be in private life, in the Army or in the Public Health Service, who vaccinates anybody for pneumonia or for influenza and tells him that it is going to prevent the disease is not telling the truth.

With reference to the mask, I am strongly of the opinion that we have overestimated its value. That is nothing against the mask, however. When I went to Camp Devens they were not using the mask. I called the doctors together and I simply said, "Shall we use the mask or not? It is not compulsory." But I said, "Every doctor who took care of cases of pneumonic plague and did not wear a mask died from it, and every man who cared for pneumonic plague cases and didn't wear a mask did contract it. You can do as you please."

I am pretty certain, not convinced, that hand to mouth infection is of more importance than droplet infection. The most frequent way in which respiratory diseases are conveyed from one to the other is by hand to mouth. I feel that we should at least think of this in order to make an effort to prevent the spread of the disease.

Dr. B. Franklin Royer, Harrisburg, Pa.: Our experience has been that there are no dependable data thus far relative to the value of vaccines so that their use can be recommended. I could mention a dozen communities as examples where the epidemic of influenza was apparently snuffed out just as efficiently with the measures we used as in those communities where the vaccine was used.

Dr. G. H. Wood, Detroit: There have been some very severe reactions, some marked depressing effects from the use of vaccines in influenza. A safe rule to follow is not to give more than one half of the dose recommended at the beginning, then watch the patient, and increase the dose as the results warrant.

Dr. Edward C. Rosenow, Rochester, Minn: We cannot solve the problem of influenza or any other problem regarding the management of disease unless we try out experimentally certain methods. I have watched the occurrence of this disease through my section of the country, and for me to sit down quietly and do nothing was impossible. I stopped very vital work of other kinds to try and do something for my countrymen.

(To be continued)

AMERICAN ASSOCIATION FOR THE STUDY AND PREVENTION OF INFANT MORTALITY

Ninth Annual Meeting, held at Chicago, Dec. 5-7, 1918

The President, MRS. WILLIAM LOWELL PUTNAM, Boston, in the Chair

Public Health Service Program for the Nation Wide Control of Venereal Diseases

LIEUT.-COL. C. C. PIERCE, U. S. S. P. H. S., Washington, D. C.: Venereal disease is a problem which affects not only the soldier and the sailor, but also the civilian of today and tomorrow. Section 6 of the act to control venereal disease passed by Congress provides for the allotment to state boards of health of $1,000,000 each year for the two fiscal years beginning July 1, 1918, for the fight against venereal diseases. For the second of these two years the payment of the state's allotment is conditioned on the expenditure of a like amount by the state in the prevention of venereal diseases. For the first of these two years this condition is not imposed.

1. State boards or departments of health receiving their respective allotments have to agree to these cooperative measures: (*a*) Venereal diseases must be reported to the local health authorities in accordance with state regulations approved by the U. S. Public Health Service. (*b*) A penalty will be imposed on physicians or others required to report venereal infections for failure to do so. (*c*) Cases are to be investigated, so far as practicable, to discover and control the sources of infection. (*d*) The spread of venereal diseases should be declared unlawful. (*e*) Provisions are to be made for the control of infected persons that do not cooperate in protecting others from infection. (*f*) The travel of venereally infected persons within the state is to be controlled by state boards of health by definite regulations that will conform in general to the interstate regulations to be established. (*g*) Patients are to be given a printed circular of instructions informing them of the necessity of measures to prevent the spread of infection and of the importance of continuing treatment.

2. The Division of Venereal Diseases details to each of the various state boards of health an officer of the Public Health Service in uniform. His work is directed jointly by the Public Health Service and the state board of health. The general plan of work for the state bureau is: (*a*) The securing of reports of venereal infectives from physicians. (*b*) Suppressive measures, including the isolation and treatment in detention hospitals, and establishment of free clinics. (*c*) The extension of facilities for early diagnosis and treatment through laboratory facilities for exact diagnosis and scientific determination of conditions before patients are released as noninfectious. (*d*) Educational measures, which include informing the general public, as well as infected individuals, in regard to the nature and manner of spread of venereal diseases and measures to combat them. (*e*) Cooperation with local civil authorities in their efforts to suppress public and clandestine prostitution. (*f*) The keeping of accurate, detailed records of all the activities of the venereal disease work, copies to be forwarded to the U. S. Public Health Service.

3. Local or legislative funds that may be available shall be used by the state or city health authorities having jurisdiction for extension of the work.

4. In extension of the educational measures, the state's health authorities and its bureau of venereal diseases shall exert their efforts and influence for the organization of a state venereal disease committee for furthering the comprehensive plan for nation-wide venereal disease control.

5. The state health authorities shall take such measures as may be practicable for the purpose of securing such additional legislation as may be required for the development of control of the spread of venereal infections.

6. The state allotment shall be expended along general standard lines for all states and in accordance with an accounting system, to be forwarded by the interdepartmental social hygiene board, approximately thus: (*a*) For treatment of infected persons in hospitals, clinics and other institutions, including arsphenamin and other drugs, 50 per cent. of the allotment. (*b*) In carrying out educational measures, 20 per cent. (*c*) In carrying out repressive measures, 20 per cent. (*d*) In general administration and other activities of venereal disease control work, 10 per cent.

This distribution is provisional and subject to modification after conference and agreement between each state and the U. S. Public Health Service to best meet the needs of the particular state.

During the 609 clinic days represented, there was a total of 25,224 visits to the clinics, with an average daily attendance of 41.09 at each clinic. During the past month, 2,301 new cases were admitted. November 15, there were 11,149 cases remaining under treatment; 28,981 treatments were administered during the month; 2,777 doses of arsphenamin were administered to syphilitics. A total of 2,933 prostitutes were treated in the clinics, detention homes and jails. Of the prostitutes placed in detention during the month, 812, or 98.5 per cent., were found to be infected with venereal disease.

DISCUSSION

DR. JOHN M. DODSON, Chicago: The west Australian type of ordinance has been adopted in Chicago for the reporting of venereal diseases. The ordinance does not permit of reporting the name of the individual, but the case is reported by number by the physician, and it is made compulsory that he report it with the understanding that if the patient fails to keep himself under proper treatment, his name shall be reported and proper steps taken to see that he is kept under treatment until he is not a menace to the community.

DR. EDWARD P. DAVIS, Philadelphia: I desire to call attention to an apparent danger in the management of syphilitic cases. Since our knowledge of the cause of syphilis is now very evident, it was formerly considered that a woman giving birth to a syphilitic child could nurse the infant without infecting herself, and that the normal relationship of the nursing mother to the child could be maintained. It is now known that the reason a syphilitic infant does not infect the mother is that the mother is latently syphilitic. It is the duty of physicians and nurses having under observation women bearing syphilitic children to see to it that those women are kept under observation to prevent the development of syphilis.

Syphilis and Its Relation to Infant Mortality

DR. P. C. JEANS, St. Louis: When conception has taken place, the effect of maternal infection on the product of conception is dependent to a large extent on the duration of the pregnancy at the time of fetal infection. The infection of the germ cell, if such an event ever occurs, would preclude the possibility of its further development. The earlier in pregnancy the infection of the fetus takes place, the more likely is pregnancy to terminate in a dead or nonviable infant. The birth of a viable syphilitic infant signifies its infection late in pregnancy. The time at which fetal infection occurs is dependent on the activity of the infection in the mother, and this in turn is dependent to a large extent on the time that has elapsed since the onset of her infection. In many instances, in untreated mothers, pregnancies occurring ten years or more after the infection of the mother have resulted in the birth of nonsyphilitic children. A compilation of statistics shows that of 4,148 pregnancies in syphilitic families, 1,258, or 30 per cent., resulted in the death of the fetus at or before term. That this is more than three times greater than what might be considered the normal waste of life at this early age is shown by a similar study among the poorer class in both St. Louis and London, and including no obvious syphilis. In St. Louis, 9.9 per cent. of 886 pregnancies, and in London, 9.4 per cent. of 826 pregnancies resulted in the death of the fetus at or before term.

In St. Louis, clinical study was made of 854 infants of 1 year or under, and Wassermann reactions were made on all infants whose family history, personal history or examination gave any suspicion of syphilis. Of the 854 infants studied, forty-two, or 4.9 per cent., were found to be syphilitic. This figure represents the minimum in this group because it was not a complete Wassermann survey. In New York, Holt found 6.2 per cent. of positive Wassermann reactions among 161 infants under 2 years of age. Holt's series was selected to the extent that it contained no cases of clinical syphilis, but did contain a certain number of infants whose history or examination gave a suspicion of syphilis. Comisky reports 3.2 per cent. of positive Wassermann reactions in 1,074 new-born babies in Brooklyn. Because of the frequency of a negative Wassermann reaction in a syphilitic new-born baby, such a study, though interesting, does not represent the true incidence of syphilis. It would seem safe to assume an incidence of about 5 per cent. for syphilis in our infant population. A survey of about 300 syphilitic families in which there occurred 1,366 living births shows that 30 per cent. of these infants died at an early age.

From 10 to 20 per cent. of adult males and about 10 per cent. of married women are syphilitic, and a minimum of 10 per cent. of marriages involve a syphilitic individual. Seventy-five per cent. of all the offspring in a syphilitic family are infected. In a syphilitic family, 30 per cent. of the pregnancies terminate in death at or before term. Thirty per cent. of all infants born alive in a syphilitic family die in infancy, as compared to a normal rate of 15 per cent. in the same class. Probably 30 per cent. of clinically syphilitic infants die as a result of syphilis. Only 17 per cent. of all the pregnancies in syphilitic families result in living non-syphilitic children that survive the period of infancy. About 5 per cent. of our infant population is syphilitic. According to St. Louis vital statistics, 3.5 per cent. of all infant deaths are ascribed to syphilis.

The City Nurse as an Agent for the Prevention of Infant Mortality

Dr. Harriet L. Hartley, Philadelphia: In the matter of determining with some degree of accuracy the health of a given district or locality, we have no better or more intelligent surveyor than the city nurse. Her experience has brought her into contact with all kinds and conditions of men. Her method of approach to the keeper of the home, usually the mother, is one that breeds friendliness and confidence. An understanding of the true condition of the home and its inmates is arrived at from a standard point of view with a minimal waste of time. The city nurse, with her general training as a nurse, knows the earmarks of disease. As a public health nurse, she readily recognizes poverty, destitution and alcoholism. She can judge whether the family income is large enough or expended in such a way as to insure the proper amount of health and comfort to the family. Her connection with the board of health makes her an authorized sanitary inspector, and her general knowledge of the principles of housing and sanitation makes her a good judge of the conditions surrounding the young infant. She can intelligently observe the care of the food, the refrigerator, utensils, etc., which either intimately or remotely affect the health of the baby. She also brings into use her knowledge of ventilation, and readily determines whether the baby gets the proper ventilation to guard it against respiratory disease. In prenatal work the city nurse has no peer. The expectant mother is much more apt to confide in the nurse who gives advice about babies than she is any other type of health worker. The nurse often learns of the pregnancy early in its history, becomes the mother's friend and confidante, and leads her in the direction she should go.

Problems of Infant and Maternal Welfare in Rural Communities

Miss Katherine M. Olmsted, Chicago: The existence or development of a well and a broadly organized public health nursing section in every state health department is the first and the most important need in any movement for better care of our rural health conditions. The obligation of this department should be: 1. To stimulate local county demand for public health nursing service and secure public funds for maintenance of work in counties. 2. To provide well trained, competent nurses to meet the demand. 3. To coordinate and supervise the work of all the nurses throughout the state, much as is done with the county health officers now with a view to standardizing fundamentals and stimulate the tendency toward a higher type of public health nursing in rural sections.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of the Medical Sciences, Philadelphia

November, 1918, **156**, No. 5

1 *New Diagnostic Sign of Foreign Body in Trachea or Bronchi. C. Jackson.—p. 625.
2 *Demonstrating Tubercle Bacilli in Urine. E. M. Watson.—p. 636.
3 *Blood-Pressure and Kidney Function Findings in Orthostatic Albuminuria. E. H. Mason and R. J. Erickson.—p. 643.
4 *Fractional Estimation of Stomach Contents. III. Effects of Hydrochloric Acid Therapy on Acid Titer of Stomach During Digestion. B. B. Crohn.—p. 656.
5 *Autoserotherapy in Tuberculous Pleurisy, with Effusion. J. C. Lyter.—p. 665.
6 *Relation of Housing to Pulmonary Tuberculosis: Report on 36,062 Cases. F. F. D. Reckord.—p. 670.
7 Focal Infections in Childhood. S. Blum.—p. 681.
8 Comparative Value of Radium and Roentgen Radiation. R. H. Boggs.—p. 690.
9 *Influence of Radium Water Therapy on Creatinin and Uric Acid Metabolism in Chronic Arthritis. F. H. McCrudden.—p. 702.
10 *Anatomy of Coronary Arteries. F. M. Smith.—p. 706.
11 Fat Redistribution in Hypophyseal Type of Dystrophy Adiposogenitalis. H. G. Beck.—p. 711.
12 *Complement-fixation in Hodgkin's Disease and Allied Affections. H. T. Kristjanson.—p. 720.
13 *Hypothyroidism in Recruit. H. Brooks.—p. 726.
14 Effects of "Mustard Gas" on Eyes. G. S. Derby.—p. 733.
15 Influenza Epidemic in Soldiers. S. Bradbury.—p. 737.

1. The "Asthmatoid Wheeze": An Intrapulmonary Foreign Body Sign.—The presence or absence of the asthmatoid wheeze has been recorded by Jackson in sixty-two cases of intrabronchial foreign body, therefore he is inclined to regard this sign as of great value in many cases in which the foreign body is not opaque to the roentgen ray. He has called this new sign the asthmatoid wheeze because the sound is somewhat similar to the wheezing heard when the ear is placed to the open mouth of an asthmatic patient. The chief difference is that there is more or less association of the sounds of râles with the wheezing in asthma, while in the asthmatoid wheeze of the foreign-body case the sound is drier, when typically elicited, though it may be associated with more or less secretion, adding more or less of the sounds of bubbling. In a typical case the wheeze is much more marked after the coughing out of all secretion than before.

2. Demonstrating Tubercle Bacilli in the Urine.—In studying numerous specimens of urine for the presence of acid-fast organisms in various conditions of urogenital tuberculosis, Watson found that one important factor not previously given much attention is to use large amounts of urine, also to keep the specimen in the original container until the final sediment is obtained and to centrifugalize thoroughly.

3. Blood-Pressure and Kidney Function Findings in Orthostatic Albuminuria.—Five cases of orthostatic albuminuria, four of which are quite typical, were studied by Mason and Erickson especially as to pulse-pressure and kidney function when in different positions. They believe that the condition of orthostatic albuminuria is a general systemic disturbance, manifesting itself in faulty development, as shown by a general visceroptosis, a "drop heart," a generalized muscular and visceral atonia, which is known to be associated with varying degrees of vasomotor instability. The symptoms so commonly complained of, such as headache, lassitude, constipation and loss of weight, are the natural results of physical conditions. The increased lordosis that is usually present is regarded as a symptom due to the faulty muscular development and tone of the lumbar muscles. This exaggerated lordosis is well recognized in many muscular dystrophies and atrophies and in other conditions involving the lumbar and abdominal muscles.

The low pulse-pressure, in the opinion of the authors, is undoubtedly the cause of the albuminuria rather than a mechanical interference with the venous return from the kidneys. The interesting observation was made that the pulse-pressure can be lowered to almost the same degree by artificially producing lordosis while in the horizontal position as when erect. The albuminuria in all these cases varied inversely as the pulse-pressure, regardless of the position.

4. **Fractional Estimation of Stomach Contents.**—Hydrochloric acid medication is discussed by Crohn. The results following the therapeutic administration of acid are correlated and conclusions drawn as to the best method for the administration of this commonly employed medicinal agent. A study of the effects of acid on the stomach during digestion was made. Particular reference was paid to the changes in acid titer of the chyme both directly after the taking of the acid and during the subsequent cycle of digestive activity. In order to study the effect of a single dose of acid, cases of achylia gastrica or cases of pernicious anemia, with complete anacidity, were chosen. These cases were all uniform in presenting in the control fractional estimation tests a complete absence of free acid throughout digestion.

Crohn found that hydrochloric acid administered therapeutically to the fasting stomach promptly disappears from that organ, the last trace leaving within twenty-five minutes. The administration of acid before a meal exerted no influence on the acid secretion of the subsequent digestive cycle. Twenty minims of dilute hydrochloric acid failed to improve the condition of anacidity when given with a test meal. Forty minims of dilute hydrochloric acid gave a definite though moderate increase of acidity; this increase was temporary in duration, being usually limited to the short period directly after taking the medication. Ten minims of dilute hydrochloric acid administered every half-hour was a mild though efficient method of increasing total acidity during digestion. It was, however, insufficient to produce free acid at any time in the cycle of digestion.

It is conceded by Crohn that the method of administering repeated small doses of acid at frequent intervals is hardly a practical one for every-day clinical use. Where it is possible, however, the method should be adopted. For temporary usage it is often highly satisfactory. The customary method of administering hydrochloric acid as a single dose is, in most instances, insufficient to relieve the abnormal condition. Small single doses (5 to 20 minims dilute HCl) fail completely. Larger doses (25 to 40 minims) give better results, though the effects are but temporary, lasting usually for the first half hour only after administration. Administering small doses at frequent intervals, that is, every half—or better every quarter—hour, is more efficient for accomplishing the desired effect. The custom of giving acid before a meal has no advantages. The best results are seen when it is taken during the early part of the digestive cycle. The effect of acid so administered is purely a local chemical one. A resultant physiologic stimulation of the mucosa was never demonstrable from Crohn's experiments.

5. **Autoserotherapy in Tuberculous Pleurisy.**—Twenty-three cases of tuberculous pleural effusion were treated by Lyter by Gilbert's method (withdrawing a few cubic centimeters of the fluid from the chest and immediately injecting it into the subcutaneous tissues of the patient). Eight cases of the series underwent complete absorption within two weeks of the beginning of the treatment. Lyter believes that the absorption in these eight cases was more probably due to the natural physical phenomena than to the stimulating effect of the treatment. His results indicate not only that the treatment does not cause absorption, accompanied by diuresis, diaphoresis, rise of temperature and leukocytosis, but that in some cases it is not entirely devoid of deleterious effects on the tuberculous process in the lung. Lyter advises that the assertion that 80 per cent. of all tuberculous effusions undergo spontaneous absorption should be qualified, as the spontaneous absorption may not occur for months, depending most probably on the organization of the fibrinous covering of the pleura.

6. **Relation of Housing to Pulmonary Tuberculosis.**—Reckford analyzes the statistics which he has gathered together from the 116 Pennsylvania State Tuberculosis Dispensaries and describes details of procedure followed by that department of state activities.

9. **Influence of Radium Water Therapy on Creatinin and Uric Acid Metabolism in Chronic Arthritis.**—The authors had an opportunity to study the influence of radium on the metabolism of three patients with chronic arthropathies. These patients, who were on a purin-free, creatin-free diet, received, five times a day, 3 ounces of water impregnated with radium emanations, 20,000 Mache units in all. Only one definite change in the metabolism was observed: A slight increase in the rate of creatinin excretion with a somewhat increased variation in the day-to-day values, an effect which persisted for a time after discontinuing the radium treatment. The radium therapy had no influence on the uric acid content of the blood or on the rate of excretion of uric acid, total nitrogen or water.

10. **Anatomy of Coronary Arteries.**—Smith's study of injection specimens of dog and human hearts showed that there is an anastomosis between the branches of the right and left coronary arteries, which is, for the most part, by means of many small vessels, but distinctly numerous and large enough to functionate.

12. **Complement-Fixation in Hodgkin's and Allied Affections.**—*Kristjanson* claims that the complement-fixation test in Hodgkin's disease, using *Bacillus hodgkini*, preferably an autogenous culture, in the preparation of antigens, may give a positive, possibly a specific, reaction if the serum be obtained from the individual at the proper phase or stage of the disease. Experimentally, animals inoculated with *Bacillus hodgkini* give a specific positive complement fixation. Normal individuals and those suffering from syphilis and tuberculosis have not given this reaction in the limited number tested by the author.

13. **Hyperthyroidism in Recruit.**—Brooks expresses surprise at the large number of these cases which he has seen among recruits. The most striking feature of these cases in nearly every instance is tachycardia, rarely accompanied by arrhythmia even in cases of very marked degree, and polygraphic studies, except in instances complicated by other vascular conditions, show, aside from rapidity, few signs of abnormal action, except that in the same case there is, under varying conditions, usually great variation in the rate of systoles. Practically always the rate is increased by exercise, though there are exceptional cases in which, as in ordinary palpitation, exercise may slow the rate, especially when the attention is thereby distracted; but speed of action is even more constantly accelerated by excitement and disturbing emotional factors. Closely associated with tachycardia is an obvious and subjective throbbing of the superficial vessels, notably of the carotids, of the brachials and even of the femorals, while that of the aorta, in moderately thin persons, is also quite evident.

Under excitement, instead of an increase in systolic stroke, there is a fall in the stroking power, and this is much more evident in the medium sized vessels, as the smaller ones seem to contract while the larger vessels expand in their arc of pulsation. There is a wide area of apical pulsation, and so violent is this at times that an actual sucking sensation is produced on the palpating palm at the diastole. The heart sounds, because of their rapidity, are usually very difficult to analyze, but in many cases a soft systolic murmur is detected at the apex, and is transmitted at times with decreasing intensity toward the axilla. The marked alteration in the quality and occurrence of this murmur in the same case at different times is occasionally a striking diagnostic feature. Everything in the nature of graphic methods seems to indicate that these murmurs are functional and not organic in origin. The tachycardia is not controlled by digitalis, even when given in massive doses. The sedatives at times, notably the bromids, give marked relief in some instances, but are apparently without effect in others. Postural and emotional rest appear to be the most efficient measures of control. Cold applications to the precordium have little or no effect. Very closely associated with these definitely circulatory symptoms are those of dizziness and fainting. Commonly these attacks are accompanied either by a marked paling of the face or by a marked hyperemia. Such attacks are directly precipitated by exercise or by emotional stress, such as, for example, occurs during a physical examination.

Next to the tachycardia the manifestations which seem most striking to Brooks are numerous evidences of emotional instability, which is an invariable accompaniment of the disease. Irritability of temper, headaches and insomnia are almost constant, and during aggressive periods an intense feeling of fear, apprehension and terror, often quite beyond the control of the patient, is manifest. Outbursts of emotionalism are followed by a stage of great exhaustion, almost amounting to prostration, in which the patient may appear to be *in extremis*. The neurovascular instability is further shown by the *tache cérébrale*, by dermographia, by urticarial rashes and by the almost constant symptom of tremor, most marked in the hands; breathlessness at times, almost a dyspnea, is manifest, but without cyanosis or definite signs of asphyxia. The deep reflexes are excited, especially the knee jerks.

A considerable number of men give a history of ancestral goiter, particularly on the maternal side and sisters, less commonly brothers of the patients, commonly show similar goiter. There is also, in most instances, a familial history of nervous instability, of hysteria, insanity, perversions or of genius. Exophthalmos, which is so striking a feature of ordinary exophthalmic goiter, is present also in long-standing instances of this type. Not infrequently it develops very suddenly: it may be bilateral or monolateral or it may vary in either eye. During periods of excitement it is most evident, and as the tachycardia and emotionalism subside so also does the exophthalmos. In fact these men present, though in mild degree in some instances, all the cardial signs and symptoms of true exophthalmic goiter. Rest is the one factor which gives relief from symptoms.

American Journal of Syphilis, St. Louis

October, 1918, **2**, No. 4

16 *Syphilis of Nervous System. D. J. Kaliski and I. Strauss.—p. 609.
17 Syphilitic Meningitis in Infants and Young Children: Report of Case. P. A. Bly.—p. 712.
18 Histogenesis of Cerebral Hypertrophic Pachymeningitis and Its Relation to Syphilis. G. B. Hassin.—p. 715.
19 Syphilis of Larynx. J. J. Kyle.—p. 727.
20 *Differential Count in Syphilis. A. Blumberg.—p. 734.
21 Serum Diagnosis of Syphilis and Gonorrhea Employing Human Complement. J. A. Kolmer.—p. 739.
22 Increasing Potency of Low Titer Antisheep Amboceptor by Means of Chemical Fractionation. R. Gilbert, and A. I. Van Saun.—p. 755.
23 Debatable Phases of Wassermann Technic. E. A. Victors.—p. 758.
24 *More Intensive Form of Arsphenamin Therapy. H. H. Hazen.—p. 778.
25 Treatment of Neurosyphilis. J. B. Gooken.—p. 781.
26 Id. R. W. Harvey.—p. 785.

16. **Syphilis of Nervous System.**—A plea is made by Kaliski and Strauss for more intensive intravenous treatment of syphilitic diseases of the central nervous system. They claim to have proved that arsphenamin and immune bodies pass the barrier of the choroid plexus and appear in the spinal fluid after intravenous therapy. It is shown that after therapeutic doses of arsphenamin intravenously arsenic is found in the spinal fluid in greater concentration than can be effected by the introduction of arsphenamized serum or arsphenamin into the fluid. The intensive and prolonged use of arsphenamin intravenously combined with the exhibition of mercury and iodids has give the authors the best results in the treatment of syphilis of the nervous system. Intraspinal medication is of occasional and secondary value only. It may be tried in selected cases after intravenous and combined therapy have proved ineffectual in the event that the biologic reactions in the spinal fluid are positive. Reeducational measures are of great value in the treatment of ataxic patients. Forty-one cases are cited in detail.

20. **Differential Count in Syphilis.**—Blumberg claims that a high percentage of either small or large lymphocytes—or both—is present in almost every case of syphilis and that increase in lymphocytes may confirm the diagnosis of syphilis even when the blood Wassermann test presents a negative reaction, provided, that other conditions, usually accompanied by lymphocytosis, are absent.

24. **Intensive Form of Arsphenamin Therapy.**—In selected cases Hazen has been giving injections of arsphenamin at seventy-two hour intervals. He has given ninety-eight injections to twenty-two different patients, never giving less than three and several times as high as eight doses. There was not a single untoward result; while a number gave the usual reactions of nausea, vomiting, diarrhea and headache, there were no evidences of any increased intolerance toward the drug. In no instance was albumin demonstrated in the urine. None of the patients showed any jaundice and none lost any weight. The dose employed was 0.4 grams per 150 pounds of body weight. For such a dose 70 c.c. of distilled and double boiled water was used, and the sodium hydroxid solution was pure and fresh. All injections were given in the office and the patients allowed to go home immediately afterward. The clinical results were very good: lesions cleared up very shortly. Nineteen of the patients showed positive Wassermanns: in one instance a course of three injections failed to change this finding, but in all other instances, bar one, the Wassermann became negative with great promptness.

Archives of Pediatrics, New York

October, 1918, **35**, No. 10

27 Clinical Study of Fifty-Five Cases of Hypothyroidism in Children. M. B. Gordon.—p. 577.
28 Establishment and Maintenance of Breast-Feeding. J. P. C. Griffith.—p. 597.
29 Some Causes of Still Birth. J. C. Edgar.—p. 603.
30 Unusual Type of Vesical Calculus. B. Bashinski.—p. 615.

Boston Medical and Surgical Journal

Nov. 28, 1918, **179**, No. 22

31 Attempt to Prevent Influenza at Harvard College. G. R. Minot.—p. 665.
32 Tooth Impacted in a Secondary Bronchus of Left Lung: Removal by Lower Bronchoscopy. S. Thomson.—p. 669.

Endocrinology, Los Angeles

July-Sept., 1918, **2**, No. 3

33 *New Pluriglandular Compensatory Syndrome (Thymus-Adrenal-Pituitary). W. Timme.—p. 209.
34 *Is There a Thymic Hormone? E. R. Hoskins.—p. 241.
35 Active Cooperation Between Physiologist and Clinician in Study of Internal Secretions. C. E. de M. Sajous.—p. 258.
36 Iodin as Active Principle of Thyroid. W. W. Swingle.—p. 283.
37 *Effect of Roentgen Ray on Response of Tadpoles to Thyroid Stimulation. C. P. McCord and C. J. Marinus.—p. 289.
38 Use of Suprarenal Products in Addison's Disease. J. Daland.—p. 301.

33. **Thymus-Suprarenal-Pituitary Compensatory Syndrome.**—Seven cases are cited by Timme in which the chief complaint was great muscular fatigability, usually combined with headache referred to the frontal region and midway between the temples. Included in the history was frequently a statement of recent or concurrent rapid growth in height as well as of the extremities. The syndrome begins in youth, some years before puberty, and goes through its varying stages in about two decades. In its incipiency it presents largely the characteristics of the so-called status thymicolymphaticus, or status hypoplasticus of Bartels. The clinical history of these cases consists of a syndrome of thymus-suprarenal-pituitary combination, one Timme says frequently met with and its various stages are easy of recognition. The main characteristics of fatigability, low pressure, headache and growth are invariable components of the syndrome and depend on maladjustments of endocrine interactivity. Stabilization of the balance may be produced spontaneously providing the sella turcica may be made to accommodate a hyperactive hyperplastic pituitary gland. This is done presumably by erosion of the bony capsule of the gland. In cases of inability of such enlargement of the sella, the syndrome persists, but the symptoms may be alleviated by the feeding of pituitary extract continuously. In the course of the syndrome other glands may be brought into the complex and alter the picture somewhat, but these are vagaries and seemingly have no great determining effect on the course of events. Once recognized in any of the early stages, the further general progress of these cases can be prognosticated with a great degree of accuracy; and intervention, if necessary, can be undertaken with a large degree of success in the amelioration of the distressing symptoms.

34. **Is There a Thymic Hormone?**—Hoskins says that whatever be the real function of the thymus, certain it is that its

production of an internal secretion has not been proved. The evidence in favor of such a theory is but circumstantial at best and very meager. It is equally difficult to prove that the thymus does not produce a secretion.

37. Effect of Roentgen Ray on Response to Thyroid Stimulation.—Selected tadpoles were subjected to the action of roentgen rays in small amounts. Certain individuals were then treated with preparations of thyroid gland and the rate of their metamorphosis compared with the metamorphosis rate of (1) normal tadpoles, of (2) thyroid-fed tadpoles which had not been irradiated, and of (3) irradiated but not thyroid-fed tadpoles. The results of these experiments indicate that irradiation is without apparent effect on normal tadpoles, but determines a slight but distinct increase in the susceptibility of young tadpoles to thyroid stimulation.

Journal of Cancer Research, Baltimore

July, 1918, **3**, No. 3

39 *Experimental "Carcinomas" of Animals and Their Relation to True Malignant Tumors. F. D. Bullock and G. L. Rohdenburg.—p. 227.
40 Adenocarcinoma or Adenoma of Liver in a Mouse. S. Itami.—p. 275.
41 Hereditary Tumor in Fruit Fly, Drosophila. M. B. Stark.—p. 279.
42 *Biologic Treatment of Cancer. G. Fichera.—p. 303.

39. Experimental "Carcinomas" of Animals.—Bullock and Rohdenburg record the results of experiments on chronic irritation, undertaken with the view of reproducing, through means other than those employed by others, such lesions as they have described, in order to ascertain whether these might not be interpreted as hyperregenerative processes rather than as true carcinomas. The authors urge that extreme caution should be observed before reports of the production of cancer by artificial means are accepted. In irritation tumors, atypical proliferation and invasive growth, even when extensive, are held to be doubtful criteria on which to base a judgment of malignancy; and in the absence of continued growth after the action of the extrinsic irritant has ceased, experimental tumors should not be classed as malignant however close be the morphologic resemblance. It is a fact that the lesions reported by the various observers quoted are produced as readily in young as in old animals, and apparently do not possess the power of continuous growth on transplantation into animals of the same species, thus increasing the doubt regarding their malignant properties. All these facts Bullock and Rohdenburg believe point to the conclusion deduced from clinical observation, that age, organ specificity, and congenital defects play an important and, in many cases, a decisive rôle in the determination of the origin of cancer, and that irritation alone is an insufficient factor.

42. Biologic Treatment of Cancer.—Fichera reviews critically the work done during the past twenty years in the biologic treatment of cancer. He says that certain fundamental principles of treatment may be derived from such a review. Importance must be attributed to suitable dosage, to the proportion between the mass to be destroyed and the curative agent, and to the alternation of oncolytic stimulation with various histogenic products. Finally histogenic treatment adds to its indirect action on antiblastic organs an important direct action by reason of the oncolytic substances introduced. In developing the biologic treatment of tumors, Fichera is convinced that chemotherapy should be practiced by means of autolysates.

Medical Record, New York

Nov. 30, 1918, **94**, No. 22

43 Case of Perforation of Duodenum Treated Successfully by Duodenal (Jejunal) Alimentation. M. Einhorn.—p. 927.
44 Case of Labyrinthal Meningitis. A. Kahn.—p. 930.
45 Syphilis in 1918. B. S. Dunn.—p. 933.
46 Meaning of the Term "Crippled." D. A. McMurtrie.—p. 939.
47 Case of Abducens Paralysis Complicating Mastoiditis. P. D. Kerrison.—p. 941.
48 Gas Poisoning. E. G. Rankin.—p. 942.

Military Surgeon, Washington

November, 1918, **43**, No. 5

49 *Epidemiology of Virulent Oriental Smallpox. C. E. Riggs.—p. 485.
50 Physical and Mental Training of Convalescents at Base Hospital, Camp Zachary Taylor. S. J. Myers.—p. 497.
51 Prompt Management of Fractures of Nose. L. Cohen.—p. 506.
52 Syphilis in Relation to Central Nervous System. L. H. Cornwall.—p. 510.
53 *Midclavicular and Midsternal Lines as Landmarks in Recording Cardiac Outline. E. H. Goodman and H. C. Harris.—p. 528.
54 *Empyema. Fluoroscopic Study of Sixty-Four Cases. C. H. Nims.—p. 538.
55 Suggested Improvements in Methods of Petrolization of Mosquito Breeding Areas. W. L. Mann and E. C. Ebert.—p. 543.
56 *D. Meningitidis in Adenoid Tissue of Nasopharynx. J. D. Aronson and S. A. Friedberg.—p. 546.

49. Epidemiology of Virulent Oriental Smallpox.—Riggs presents the results of his study of eight cases of smallpox occurring among a thoroughly vaccinated group of men. During the winter of 1917-1918, China suffered severely from epidemics of smallpox, diphtheria, scarlet fever and plague, and each of these diseases manifested an unusual degree of virulence. The eight men attacked were believed to be as fully protected against smallpox as is possible by means of vaccination. The interest in the situation, then, was in the result which might be expected to follow when a most virulent type of smallpox encounters a thoroughly vaccinated group of men.

In this instance, when more than 1,000 men were fully exposed to the most virulent epidemic that had visited the Chinese coast in many years, there resulted eight cases of smallpox representing five varieties of the disease. The ordinary variety of smallpox, that is, the discrete type of the disease, was not to be found in this series of eight cases. The virulent infection overcame whatever immunity had been established in the individuals by vaccination and resulted in one or another of five uncommon varieties of the disease. The discrete variety, the type that is ordinarily met with, was conspicuously absent.

The five varieties occurring in this epidemic were modified, abortive, confluent pustular hemorrhagic, and purpuric smallpox. Four of the eight cases were very mild and soon terminated in recovery without complications. With the remaining four, the the infection took on a violent form and ran a rapidly fatal course. Riggs urges that in the presence of a virulent epidemic of smallpox, at least three vaccinations in series of one week interval should be restored to, as this method seems to obtain a large number of "retardation" takes which in all probability have considerable immunizing power.

53. Midclavicular and Midsternal Lines for Recording Heart Outlines.—The authors' studies had for their object the question of the distance of the midclavicular line from the midsternal line, the relation of the left border of the heart to the midclavicular line, and the relation of the midclavicular line and the left border of the heart to the individual's height, weight and chest measurement. A group of normal men (307) was studied, irrespective of their nativity, physique and color, the only demand being that they must be free of any appreciable physical defect. These men were weighed, their height and chest were measured and, in addition, the distance from the midsternal to the midclavicular line was determined, the heart was percussed and the position of the left border expressed in centimeters distant from the median line. All methods were essentially clinical; no corroboration of the percussion was made orthodiagraphically. It was found that the position of the midclavicular line on the chest wall varies disproportionately with the height. Nor is the left border of the heart a fixed quantity, nor does it vary proportionately with the height. Thus a man of 5 feet 5 inches may have a heart 0.7 cm. larger than the man of 6 feet 2 inches. The largest hearts were seen in the man of 65 to 66 inches, and in these individuals the left border was over 1 cm. outside the left midclavicular line. As a matter of fact, in only two instances was the left border within the midclavicular line, namely, in the men of 69 and 74 inches.

Obviously this line is not a safe landmark, and equally obvious is the observation that no standard of comparison between the height and cardiac outline can be made. The only possible deduction is that irrespective of height and the midclavicular line, the distance of the left border from the median line is the only fair criterion, and, from the authors' figures, this distance is 9 to 10.5 cm. The midclavicular line is variable and also the size of the heart, but the left border in all but three instances (in the men of 150 to 159, 160 to 169, 200 to 209 pounds) was beyond the left midclavicular line, sometimes as far out as 1 cm.

54. **Emypema.**—Nims claims that much light is cast on the proper interpretation of the fluoroscopic image if the type of infection is known. Cases due to infection with *Streptococcus hemolyticus* are much more difficult of interpretation than are those with the standard types of pneumococcus, and more fatal. The diagnostic value of rolling the patient slightly from side to side for fluoroscopic study is strongly emphasized, for by this means only can the location of pus be determined in its anteroposterior relations.

56. **Meningitis Carrier.**—The authors cite the case of a soldier who was a carrier of meningitis. The organism was harbored in the nasopharynx exclusively. The persistence of the carrier condition was due to the localization of the organism in the adenoid tissue.

Neurological Bulletin, New York

September, 1918, **1**, No. 9

57 *Temperature Reaction in Nervous Diseases. E. L. Cornell.—p. 335.

57. **Temperature Reaction in Nervous Diseases.**—The reaction to simultaneous cold and hot stimulation in twenty-two cases of syringomyelia, tabes dorsalis, multiple sclerosis, peripheral neuritis, and a case presenting a capsulothalamic syndrome was investigated by Cornell. It was found that patients suffering from syringomyelia, tabes dorsalis, multiple sclerosis, and the type of thalamic lesion presented in this study, generally show some disturbance in reactions to double thermal stimuli, whether or not evinced by ordinary clinical tests. There is a larger proportion than normal of single responses to double stimuli. There is more than a normal tendency, in many cases, to call temperatures of 41 degrees to 44 degrees C. or higher, warm instead of the usual hot. Reactions to double stimuli are in general more disturbed than reactions to single; and H-C responses more than C-H. C-H responses indicate the nearest approach to the normal reaction; they are the most frequent type in the least disturbed cases (with one exception); and they are nearest to normal in time for each individual. The differences between the different syndromes are sufficiently distinct to be suggestive, although there is some overlapping. Multiple sclerosis has a particularly clear-cut characteristic—a dissociation of the perception of doubleness. The double stimulation acts in such a way as to delay the perception of hot more often than that of cold.

New York Medical Journal

Nov. 30, 1918, **108**, No. 22

58 New Method of Making Gonorrheal Complement Fixation Test. R. B. H. Gradwohl.—p. 929.
59 Detection and Measurement of Latent Ocular Deviations. F. W. Marlow.—p. 936.
60 Clinical Observations in Splanchnoptosis. G. L. Lambright.—p. 939.
61 Nonsurgical Treatment of Exophthalmic Goiter. I. Bram.—p. 942.
62 Congenital Fistula of Lacrymal Sac. Three Cases. W. B. Weidler.—p. 944.
63 Mechanics of Defecation. C. D. Spivak.—p. 945.
64 Cerebrospinal Meningitis. Case Treated by Ten Serum Injections. R. W. Angevine.—p. 946.

Pennsylvania Medical Journal, Athens

November, 1918, **22**, No. 2

65 War and the Child. S. McC. Hamill.—p. 45.
66 *Reeducation of Injured Soldier. T. McKenzie.—p. 50.
67 Cardiovascular Problem in Aviation Recruit. J. I. Johnston.—p. 53.
68 Roentgen-Ray Examination of Heart and Great Vessels. G. W. Grier.—p. 56.
69 Health Insurance. J. B. McAlister.—p. 58.
70 Id. W. F. Donaldson.—p. 62.
71 Id. F. L. Van Sickle.—p. 63.
72 County Society Dues and Per Capita Assessment for 1919. W. H. Mayer.—p. 64.
73 Id. J. L. Lenker.—p. 65.
74 Id. J. B. F. Wyant.—p. 67.
75 What Can County Society Do for Its Members in Service? W. T Sharpless.—p. 68.
76 Id. J. M. Quigley.—p. 70.
77 County Secretary. F. M. Crandall.—p. 71.

66. **Reeducation of Injured Soldier.**—McKenzie says that the majority of the men who fill our war hospitals and convalescent homes must depend for most of their present treatment, and for their future efficiency, on the masseuse, the practitioner of electro and hydrotherapy, the physical instructor, and the teacher of vocational training. The course usually followed begins with preparation by heat, either wet or dry, or produced by electricity, on through the stimulation of nutrition by massage and passive movement, then to simple exercise taken voluntarily and eventually to skilled movements by gymnastics, games and handicrafts, and graduating into industrial training. The various steps of the treatment are described in detail.

Southwestern Medicine, El Paso

October, 1918, **2**, No. 10

78 Operative Indications in Acute Mastoiditis. J. J. McLoone.—p. 1.
79 Pellagra. Report of Cases. P. Rigney.—p. 4.
80 Tuberculous Meningitis. W. R. Smith.—p. 9.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy

October, 1918, **23**, No. 5

1 Portable Roentgen-Ray Generating Outfit. W. D. Coolidge and C. N. Moore.—p. 137.
2 Electro-Physics of Ionic Medication. H. H. U. Cross.—p. 149.
3 Spur-Like Formations of Bone Following Amputation. J. D. Morgan, B. A. Cantab and C. M. McGill.—p. 154.
4 Method of Preventing Dust From Getting Between Fluorescent Screen and Lead Glass. D. Stone.—p. 161.

British Journal of Surgery, London

October, 1918, **6**, No. 22

5 Bone Growth and Bone Repair. A. Keith.—p. 160.
6 Weight Extension in Treatment of War Fractures. W. H. Ogilvie.—p. 166.
7 *Diagnosis and Treatment of Injuries to the Crucial Ligaments. Report of Cases. S. A. Smith.—p. 176.
8 *Affections of Large Joints Due to Gunshot Wounds: Their Late Results and Treatment. S. W. Daw.—p. 190.
9 *Ununited Fractures, with Special Reference to Gunshot Injuries and Use of Bone Grafting. E. W. H. Groves.—p. 203.
10 *Treatment of Disabilities of Upper Extremity in Military Surgery. N. Dunn.—p. 248.
11 *Results of Primary Excision for Wounds of Elbow-Joint. A. E. Moore.—p. 265.
12 Structure, Forms, and Conditions of Ends of Divided Nerves: Regeneration Neuromata. E. M. Corner.—p. 273.
13 *Injuries of Peripheral Nerves from Surgical Standpoint. H. S. Souttar and E. W. Twining.—p. 279.
14 *Suture of the Musculospiral Nerve: Three Cases. G. Williams.—p. 315.
15 Operative Procedure in Nerve Injuries. R. Kennedy.—p. 317.
16 Case of Gunshot Injury of Meckel's Diverticulum. G. Taylor.—p. 324.
17 Case of Congenital Defect of Thorax, with Sprengel's Deformity. H. Burrows.—p. 325.
18 Case of Torsion of Appendix. J. E. Payne.—p. 327.

7. **Treatment of Injuries to Crucial Ligaments.**—Generally speaking, Smith says, the immediate treatment of injuries to crucial ligaments should be conservative rather than operative. Recent injuries to the joint that show abnormal mobility should be roentgenographed as a routine. This will eliminate avulsion of the tibial spine. Where there is rupture of both crucials, due to lateral or posterior dislocation of the knee, the limb should be immobilized with the knee flexed to 20 degrees for at least three months, but faradism to the quadriceps and general massage with movements of the patella should be practiced daily. Good results have been reported from treatment by prolonged fixation of the joint. When the lesion is accompanied by a paralysis of one or both of the popliteal nerves due to stretching, postural and electrical treatment for the nerve injury must also be undertaken. Where there is a recent avulsion of the tibial spine, Smith advises to try the effect of immobilization of the knee in the fully extended position for twelve weeks, combined with massage and faradism, rather than to treat the case by primary operation and fixation of the detached ligament and its bony insertion. In cases of old standing, however, operative mea-

sures are indicated. The after-treatment of anterior crucial injuries can generally be undertaken by means of appliances worn for an indefinite period.

In the operative treatment of anterior crucial injuries, the following operations have been done at varying times, apart from those of immediate suture of the ligaments: (1) plication; (2) reefing; (3) wire loops; (4) silk ligament substitution; (5) fascial substitution. Smith's experience with these operations leads him to endorse only fascial substitution.

8. **Gunshot Wounds of Large Joints.**—Daw discusses this subject in all its aspects. He is convinced that improvement of mobility is more likely to be gained by slight movements followed by periods of rest, or by slow stretching of contracted parts—in other words, by gradual change of position —rather than by forcible movements through a large range. Open operations to obtain mobility, he thinks, are rarely advantageous, except in the case of the elbow joint, where they are usually satisfactory. He does not favor passive movements which he says have very limited value, and are often harmful. Active movements, however, especially those of normal use and occupation, Daw regards as being most valuable, often doing more to increase mobility than surgical measures.

9. **Treatment of Ununited Fractures.**—This paper deals with a series of sixty consecutive cases treated by Groves during the last two years, and refers almost entirely to gunshot injuries. Loss of substance was the most important factor in the production of nonunion. This cause accounted for thirty-four cases (56.6 per cent.). Necrosis, which is a common cause of delayed union, but a very rare cause of nonunion, was operative in three cases. In twenty-one cases nonunion was due to displacement of the main fragments. In two cases eburnation was the cause of nonunion. The series contains thirty-four cases of autogenous bone grafting. Of these, ten (29.4 per cent.) have been failures, five (14.7 per cent.) have been eventual successes in producing bone union after extrusion of the graft, and nineteen (55.8 per cent.) have been complete successes. In every one of the fifteen cases where success was not complete, the cause of failure was traced. The reasons for failure were: operation performed too early; scanty contact between the graft and its bed; a sliding graft; patient fell on his arm and broke the graft, bursting open the wound; the graft was laid in unhealthy bone which should have been removed; too complicated a procedure was adopted, and the patient died of shock; the humerus was not immobilized adequately, and the arm, hanging on the graft, broke the fixation; scars in front of the tibia were not sufficiently replaced by healthy tissue before grafting; periosteal flaps with thin bone scales adhering to them were turned down over the gap and produced only a thread of bone.

10. **Treatment of Disabilities of Upper Extremity.**—Dunn recommends nerve suture as the prime consideration in the treatment of disability of the joints of the upper extremity, and emphasizes the importance of tendon transplantation as the final operation to be undertaken in the treatment of disabilities of these joints. For it to be successful, the muscles must be strong and healthy and these will only be available if the joints they control have allowed of their free development.

11. **Primary Excision for Elbow-Joint Wounds.**—Eleven consecutive cases were recently treated at the Bristol orthopedic center after having had primary excision of the elbow joint performed at the front. Ten have flail elbows to a greater or lesser degree, and the uselessness of the limb is—if the length of time from the original wound be taken into account—in almost direct proportion to the amount of bone removed. As the amount of bone removed decreases so does the functional result improve. Moore says that extensive primary excision must result in a flail joint. Limited excision, however, is satisfactory. If the bone is comminuted, a muscle-fascia flap should be carried in to cover comminuted bone as is done in arthroplasty. The postoperative support of the forearm is essential, and rest is more important than early movement. Capsulorrhaphy in certain chosen cases of flail elbow has been effective.

13. **Injuries of Peripheral Nerves.**—The lesson which Souttar and Twining have learned best from their observation of 122 cases is that success in nerve surgery is a matter of organization. The investigation of the cases is so complex, the operations involve such unusual details of experience and technic and the after-treatment required is so tedious and varied, that only by means of an extensive organization can they all be satisfactorily carried out. The highest operative skill is of no use in the face of incompetent physicotherapy, while the most perfect physical treatment is powerless to remedy the mistakes of a clumsy surgeon. The authors plead for the concentration of all nerve cases in centers where they will have at their disposal the extensive material resources, the clinical experience, and the trained patience without which their recovery is a matter of chance; and they plead for routine and for simplicity in such a center.

A careful examination should be made in every case and recorded as soon as the patient is so far recovered as to enable it to be carried out. This examination is repeated once a month, and meanwhile he is every day under the close observation of the department until he leaves the hospital. After that an attempt is made to keep in contact with the man himself or his medical adviser. In operating, the surgeon should follow a simple and precise routine. He should have as clear and accurate a knowledge as is possible of the anatomy of the region, and the condition of the nerve which he may expect to find. He should have a clear idea of what he means to do, and he should do it in the simplest manner possible. The physical treatment of the case, before and after operation, should be based on a definite routine, although it should be directed to the special requirements of the patient, and should introduce all variety that is possible.

In the preoperative care of the patient the authors regard the whirlpool bath as the most powerful curative physical method at present at our disposal. It facilitates other methods, softening the limb for massage, and increasing its conductivity for electricity; it reduces pain; and it produces a feeling of wellbeing in the limb which stimulates the patient to those voluntary exertions without which no complete recovery can be obtained. A very important feature of the treatment is the great economy in massage effected. The duration of massage has been reduced from thirty to ten minutes, the actual process is easier and less laborious, while the results are in every way superior to those which could be obtained previously.

14. **Suture of Musculospiral Nerve.**—The three cases reported by Williams show the completeness with which motor recovery takes place after suture of the musculospiral nerve, and they emphasize the progressive downgrowth of the axis cylinder. The technic of the operation has in every case been quite simple, the nerve ends being brought together without any tension by a single catgut suture through the substance of the nerve. The line of suture was wrapped round the subcutaneous fat. Precautions were taken to prevent any tension on the union until a month had elapsed. In all cases the muscles paralyzed were relaxed by an extension splint.

Journal of State Medicine, London

May, 1918, **26**, No. 5

19 Medical Services of the Italian Army. F. De Filippi.—p. 129.
20 Milk and Health. J. Crichton-Browne.—p. 140. (To be continued.)

June, 1918, **26**, No. 6

21 Public Health and Alcoholism Among Women. D'Abernon.—p. 161.
22 Health Problems and State Ministry of Health. W. Astor.—p. 170.
23 Milk and Health. J. Crichton-Browne.—p. 178.

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24 Women's Health and Work in War Time. O. Gordon.—p. 193.
25 Women Workers and Health of the Nation. A. M. Anderson.—p. 205.
26 *Membranous Colitis Treated with Enterococcus Vaccines. A. H. Drew.—p. 217.

November, 1918, **26**, No. 11

27 Problem of Birth Control with Special Reference to Public Health Aspect. C. K. Millard.—p. 321.
28 Influence of a Ministry of Health on Local Organization and Administration. E. W. Hope.—p. 338.

26. **Membranous Colitis Treated with Enterococcus Vaccines.**—Fifteen cases of mucous or membranous colitis have been treated by Drew with great success by means of autogenous vaccines. The patients all exhibited most of the classical symptoms of this disease. All the patients with the exception of one, passed casts which examination showed to consist of a mucoid material, containing many goblet cells, leukocytes, and, in some cases, acicular crystals. The membrane in all cases swarmed with bacteria, of which the gram-positive forms predominated. In fourteen of the cases the enterococcus was observed together with *Streptococcus faecalis*. In no case could any evidence of agglutination be obtained with either organism, but in all cases a low opsonic index was obtained with the enterococcus. Complement fixation was obtained with four out of the six cases tested, using the enterococcus as an antigen. Drew found that many patients are extremely susceptible to the enterococcus, hence initial doses of vaccine of not more than 2 to 3 million cocci should be given. The treatment should be continued with gradually increasing doses till 500 million cocci can be injected without producing reaction.

Lancet, London

Nov. 9, 1918, **2**, No. 4967

29 *Neuroses and Psychoses of War. W. A. Turner.—p. 613.
30 Factory and Workshop Conditions and Prevalence of Pulmonary Phthisis. B. Moore.—p. 618.
31 **What Are the Disabilities and Compensations Entailed by Reproductive Function of the Female?* W. A. Lane.—p. 622.
32 Pharmacology of Alcohol. R. B. Wild.—p. 623.
33 Agglutinating Properties of Certain Sera Against B. Typhosus, B. Paratyphosus A and B. T. T. O'Farrell.—p. 626.

29. **Neuroses and Psychoses of War.**—There appears to be general agreement on the value of the segregation of soldiers suffering from the neuroses of war, and Turner says three to four years' experience has justified the principle. It is essential that these patients, when segregated, should be under specially trained medical officers and that "an atmosphere of cure" should pervade the special hospital. The great value of segregation is that all patients may be studied individually and all agents determining causation, exaggeration of prolongation of symptoms may be sought out and eliminated. There is no evidence that in properly conducted hospitals these patients imitate each others' tremors or abnormal gaits, while it is well known that in general hospitals the eccentricities of conduct and behavior of the hysterical patients make them objects of curiosity and often of humor to the other patients. It has long been recognized that the sooner the patients are brought under skilled treatment the more rapid and satisfactory is the cure. By these means the symptoms which in the early stages are removable and "fluid" are prevented from becoming fixed and a "habit" established.

The French Military Medical Service recognized this early in the war and established neurologic centers in the zones of their armies. In consequence of the success attending the treatment of the war neuroses in these centers similar centers were established in the areas of the British armies in the winter of 1916-1917. A large number of cases of war neuroses in the early stages of their disability derive great benefit from a modified rest cure. In the later or "habit" stages a judicious combination of suitably directed psychotherapy and selected occupation, according to the mental and physical fitness of the soldier, gives the most satisfactory results. Occupation further supplies the best means of grading the soldier when the time arrives for his discharge from hospital to duty.

31. **Disabilities and Compensations Entailed by Reproductive Function of the Female.**—Lane speaks particularly of the thyroid. It is most closely associated with the sexual function in the female. The variations in the size of the thyroid afford clear confirmation of the preponderating influence of sex in the woman as compared to the part it plays in man. The thyroid enlarges periodically during the whole period of the woman's sexual life. This is more marked during a few days preceding menstruation, and continues while the period of sexual desire is at its height. After this the thyroid diminishes in size. This condition exists all through the sexual life of the woman. The enlargement of the thyroid is accentuated by intercourse and still more by pregnancy. The thyroid and the ovary would appear to go through associated stages of activity and rest.

Lane calls attention to the fact that one of the most marked features in advanced cases of chronic intestinal stasis in the woman is the total absence of sexual desire, it being replaced in many instances by a feeling of disgust for intercourse. Associated with this there is in this disease great wasting of the thyroid. This wasting is most conspicuous in the isthmus, which cannot be detected by the finger though the rings of the trachea can be accurately and clearly defined. The thyroid varies in size in the circumstances described in women whose hair is towy or red, as compared with the variations in women with dark hair. It alters with the intensity of the sexual appetite, which is a more marked feature in women of this colored hair than it is in the brunette. It is obviously the case that this type of woman resists the poisonous influences of chronic intestinal stasis with much more vigor and that she retains her sexual appetite up to a later stage in that disease than does her dark-haired sister.

Lane has noted that one of the most remarkable effects of freeing ileac effluent in chronic intestinal stasis by the removal of the colon is the rapid return of sexual desire, which may have been lost for some considerable time. Not only does it return to normal conditions, but in many cases it becomes manifestly exaggerated. In the female the toxins or organisms which are derived from the intestine in chronic intestinal stasis produce by their influence on the overstrained thyroid, directly through its blood supply or indirectly through its nerve supply, a far greater change than in man, and this occurs during the period of greatest sexual activity. Pregnancy affords the static woman with the prolapsed, angulated, and dilated gastro-intestinal tract, who exists in enormous numbers in the community, an opportunity of rehabilitating herself by reestablishing temporarily the normal flow of the intestinal contents, and so permitting her to store up in her body such a quantity of fat and muscle as will serve to retain her viscera in their correct positions and functions. How often, asks Lane, does one see a poor, thin, static virgin converted into a plump, healthy, happy mother by a pregnancy? How often is the surgeon called on to perform operations of a more or less mutilating character on the breasts and intestinal tract of women who, if they were able to perform the normal functions which they were born to carry out, would be restored to a state of health and happiness instead of leading lives of necessarily increasing invalidism and being a nuisance to themselves and to those with whom they are brought in contact?

Medical Journal of Australia, Sydney

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34 Symptomatology of Disorders of Stomach from Physiological Aspect. A. E. Mills.—p. 279. (To be continued.)
35 Principles Underlying Surgery of Gastric Ulcer. G. Craig.—p. 282.

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36 The Mentally Deficient. P. A. R. Lalor.—p. 299. (To be continued.)
37 Symptomatology of Disorders of Stomach from Physiological Aspect. A. E. Mills.—p. 301.

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38 From Soldier to Civilian. F. J. Chapple.—p. 321.
39 The Mentally Deficient. P. A. R. Lalor.—p. 323.

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40 Prophylaxis and Treatment of Gastro-Enteritis. T. H. R. Mathewson.—p. 343.

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41 Uncinariasis in Pinghsiang Colliery, Hunan. F. C. Yen.—p. 81.
42 Pneumonic Plague. Ministry of Home Affairs Report.—p. 88.
43 Smallpox in China. K. C. Wong.—p. 94.
44 Chinese Ginseng, Its Distribution and Manufacture. F. J. Brumfield.—p. 97.
45 Manufacture of Serum. M. F. Wilson.—p. 104.

Tropical Medicine and Hygiene, London

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46 Heart Block in a Sudanese. A. J. Chalmers and E. Gibbon.—p. 213.

Archives Médicales Belges, Paris

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47 *Surgical Shock; Nature and Treatment. E. H. Starling.—p. 369.
48 *Latent Period in Shock. D. Baruch.—p. 377.
49 *Meningeal Reactions in Syphilis. B. Dujardin.—p. 390.
50 Treatment of Syphilis in a Training Camp. M. Cheval and M. Moreau.—p. 411.
51 *Treatment of Gonorrhea in Men on Active Service. F. Van den Branden.—p. 419.
52 *Deep Antisepsis. J. Voncken.—p. 437.
53 Epinephrin Test of Hyperthyroidism. J. De Laet.—p. 481.

47. **Surgical Shock.**—Starling is professor of physiology at London, and he concludes this report of his research on shock by emphasizing that shock is a state of hyperstimulation rather than of paralysis. Stimulants therefore are directly contraindicated, while morphin becomes the main reliance. There is general constriction of the blood vessels, and this is increased by the action of cold. The low pressure is due to the small amount of blood in actual circulation. The lacking blood must be replaced, and the acidosis from reduction of the alkaline reserve in blood and tissues must be combated with an alkaline fluid. Experience has shown the advantages for this of a 5 per cent. solution of gum acacia containing 2 per cent. of sodium bicarbonate. An injection of 500 c.c. of this solution should be given whenever an operation is to be done on a wounded man in shock.

48. **Latent Period in Shock.**—Baruch explains shock as the initial nervous shock, the effect of the traumatism. This sets in play a number of inhibitory actions, and these in turn entail profound modifications in important functions of the organism. Usually several hours elapse before they become manifest, and this latent period seems to be the preparation, the passage of the organic functions towards a deficiency, an upsetting of the balance, which permits complications of all kinds, and especially infection to get a foothold in the organism.

49. **Meningeal Reactions in Syphilis.**—Dujardin discusses the import for diagnosis and prognosis of the tension of the cerebrospinal fluid, its lymphocytosis, globulin and albumin content, and the Wassermann reaction in the fluid and in the blood. He assumes that the antibodies inducing the Wassermann reaction are derived from the blood, and that they pass into the fluid only when the meninges are pathologic. The normal meninges are not permeable for them, and hence the relative quantity of these antibodies in the fluid is an index of the degree of the involvement of the meninges. He determines this permeability index by ascertaining the minimal amounts of the fluid and of the serum which give the Wassermann reaction. If the serum gives it at a dilution of 1:10 and the fluid at 1:2, the former is thus five times stronger, and the permeability index is 1/5. The different forms of syphilitic nervous affections have special types of this index, and it is modified specifically by the effect of treatment. His extensive experience has demonstrated that with a zero index, every case of syphilis of the nervous system (not having presented paralysis or epilepsy), can be regarded as fit for military service provided the treatment can be kept up systematically, even if the Wassermann reaction in the blood is still positive. Men can be regarded as fit only for limited duty when the meningeal lesions persist (over 1.5 albumin) and the index persists after two courses of arsenical treatment. Also those who have had transient paralysis or epilepsy. Also those with incipient tabes, the reflexes abnormal, and the index persisting. Men should be discharged from the service who present syphilis of the nervous system with a permeability index persisting high (from 1/1 to 1/5) after two courses of arsenical treatment, and with more than ten units of antibodies in the blood and high albumin content in the spinal fluid.

51. **Treatment of Gonorrhea in Troops on Active Service.**—Van den Branden has no faith in the men treating themselves, but says that he has cured 65 per cent. of 410 acute cases and 53 per cent. of 232 chronic cases; 11 per cent. in each group are still under treatment, and 17 and 33 per cent. have been lost track of. The venereal morbidity in the Belgian army is probably higher than in other armies, as the men had no homes to go to when given furloughs, their homes and families being in the hands of the Germans. In treatment he applied the same measures as in peace times, with as scrupulous care, endoscopy, etc.

52. **Latest German Method of Antisepsis.**—The antiseptic is injected deep into the tissues all around the focus, making from seven to thirteen or more deep injections to encircle the focus. This is expected to form a barrier to wall in infection and keep it from spreading. The antiseptics preferred are derivatives of quinin: ethylhydrocuprein (optochin) and isoctylhydrocuprein (vuzine). The latter is extracted from a tropical plant *Remijia cuprea*, the Brazilian *quina do serra*. Another method by which this principle is applied is by expelling the blood from the limb and keeping it out with a tourniquet. Then 100 c.c. of a 1 per thousand or ten thousand solution of the antiseptic is injected into a vein, under considerable pressure. In half an hour or an hour the tourniquets are removed. Tuberculin has been injected in this way and other drugs, but serious by-effects have been observed, gangrene and pyemia with some war wounds. The addition of 0.1 gm. of lactic acid to the liter of the solution of the antiseptic prevents precipitation from the alkaline blood left in the veins. The favorable evolution of war wounds treated in this way has recently been ascribed to the biochemical properties of the quinin rather than to any direct antiseptic action, so that the principle, after all, Voncken says, is like that of Carrel's method.

Bulletin de l'Académie de Médecine, Paris

Oct. 22, 1918, **80**, No. 42

54 *Air in Transmission of Epidemics. A. Trillat.—p. 369.
55 *Surgical Suturing of Lips Together. H. Morestin.—p. 372.
56 *Gas Embolism in Caisson Work. G. Jean and Viguier.—p. 377.
57 Operation on Frontal Sinus Through Nose. J. Bourguet.—p. 378.

54. **Microbes in the Air.**—THE JOURNAL has summarized some of Trillat's previous communications on the condensation of moisture on microbes floating in the air. He says here that this moisture condensed on the microbes serves as a culture medium as it dissolves gases that come in contact with it, especially the gases in expired air. The microbes expelled in droplets of spray in coughing and sneezing are preexisting microbes, but the microbes floating in the air in the condensed-moisture culture medium are liable to propagate and send forth swarms of newly born microbes to carry on the game. This invisible microbian mist condenses on cooler surfaces, as on the clothing when coming into a warm room from out of doors. The more vitiated the air, the more concentrated the culture medium formed by the moisture condensed on the microbes. A draft of air may sweep a cloud of these newly born microbes far from their primal source, and explain many otherwise mysterious cases of contagion. Or when the moisture condenses on the cooler surface of clothing this may provide the microbes with a still better culture medium from sweat or other matter on the clothing or hair. The propagation of the microbes may thus keep on indefinitely, and they may be spread broadcast wherever the person goes. Trillat's research has demonstrated the actual occurrence of all these phenomena with ordinary microbes, and naturally, he says, they must occur in a still more pronounced form the smaller the microbes, such as the filtrable causal agents of influenza.

55. **Suturing the Lips Together.**—Morestin expatiates on the advantages of cheilorrhaphy after an operation on one or both lips, or a burn. It averts cicatricial retraction and ensures as symmetrical a healing as conditions permit, the sound lip serving to balance and hold in a good position the lip that is being repaired. The patient can be fed easily from a catheter or nursing bottle introduced at the corners of the lips. His patients thus treated found no difficulty in spitting and smoking and none complained, while this cheilorrhaphy rendered possible certain autoplastic operations otherwise impossible to realize.

56. **Gas Embolism in Caisson Work.**—In the case described the workman was new at the task and the third day developed intense pain in his left thigh with other symptoms of caisson sickness, followed by a vast eschar in the left buttock,

corresponding to the course of the deep gluteal artery. Recovery followed under inhalation and subcutaneous injection of oxygen, with camphorated oil and strychnin, and excision of the devitalized tissue. It is the only instance Jean and Viguier know of in which the bubbles of gas were large enough to obstruct an artery of this size.

Journal de Médecine de Bordeaux

October, 1918, **89**, No. 10

58 *Bone Grafts. Charbonnel.—p. 279.
59 Early Detection of Tuberculosis in Soldiers. Meslier.—p. 289.
60 Secondary Suture of War Wounds. Mongie.—p. 291.
61 *Mishaps with 914. Petges, Gratiot and Cottu.—p. 293.
62 *Enteropathies in Soldiers. Dargein.—p. 298.

58. **Free Bone Grafts.**—Charbonnel discusses the various methods for bridging the gap after loss of a section of the tibia, and describes the successful outcome in a case in which the fibula of the man's other leg was used for the graft. The fine results in this case justify, he thinks, the extensive application of this method of autografts with bone plus periosteum from the sound mate. The exact technic is described with illustrations. His case was subjected to a trying test, as at the fifth month the patient fell and fractured both the graft and the other bone in the leg. But they healed well and by the twentieth month radiography shows that the graft has not lost any of its opacity, while it is gripped firmly by callus coming from the stumps of the tibia. The graft itself does not seem to have participated in the callus production.

61. **Mishaps with Neo-Arsphenamin.**—Petges reports seven cases of severe therapeutic complications and one death among the 3,500 injections of this drug in the last seven months at an army skin and venereal center. The two cases with convulsions rapidly improved; the two with grave encephalomyelitis, and the two with the same plus meningitis also recovered but very slowly, and certain sequelae still persist. The graver cases were with recent infection and the primary dose was small. The one fatality occurred after the second injection, and the next gravest cases after the fifth and sixth injections. The paraplegia persisted for several months and in one case was accompanied with hematuria and gangrenous cystitis but clinical recovery followed in six months, except for slight paresis of the legs and Babinski sign. There had been preceding mercurial treatment only in one case as some of these patients were in the chancre stage. Neurofixation of the syphilis virus must be excluded, and as the technic cannot be incriminated, the disturbances must be ascribed to the drug itself. The patient should be warned of the possible danger from arsenical preparations, and he should assume some responsibility as well as the physician.

62. **War Enteropathies.**—Dargein emphasizes the necessity for explaining to the men the mechanism of the reflex sensations of which they may complain, and which are out of all proportion to the insignificant initial disturbance. He warns against measures liable to breed the "sincere pseudosick," the *pithiatiques de l'intestin.* An individual card or booklet for the pathologic data of each man would save a great deal of groping in the dark, and save many cases of purely functional disturbance from having the general health compromised by ill-advised therapeutic and dietetic measures.

Paris Mêdical

Sept. 28, 1918, **8**, No. 39

63 The Model Sanatorium. E. Sergent.—p. 245.
64 *The Meninges in Malaria. L. Barrillon and others.—p. 250.
65 *Partial Tetanus. H. Français.—p. 255.
66 Remote Sequels of Acute Poliomyelitis. Pfeiffer.—p. 257.

Oct. 19, 1918, **8**, No. 42

67 *Aviators' Heart. G. Etienne and G. Lamy.—p. 293.
68 *Opium in Heart Disease. Laubry and Esmein.—p. 296.
69 *Complete Juvenile Arrhythmia. L. Gallavardin.—p. 301.
70 *Rupture of Heart Valves by Shell Wind. Perrin and Richard.—p. 304.
71 *Slow Malignant Endocarditis. R. Debré.—p. 308.
72 *Serofibrinous Pericarditis. Soulié and Benhamou.—p. 313.
73 Viscosity of the Blood in Heart Disease. M. Leconte.—p. 316.

64. **The Meninges in Malaria.**—Instead of being a disease of remote colonies, malaria is entering the current practice of physicians throughout France, as so many native and colonial soldiers have spread malaria germs broadcast. In this article a series of ten recent cases are reported in which meningism or meningitis dominated the clinical picture. The patients were all between 20 and 22 except one child of 4. The malarial parasite has never been found in the spinal fluid, so the meningeal disturbances must be of a toxic nature. This should be suspected with every meningeal reaction in persons known to have malaria or to have lived in a malaria infested region, and the blood should be examined.

65. **Partial Tetanus.**—Eleven days after a seton wound of the calf, intense pain, contracture and muscular spasms developed in the leg and persisted for a month without other symptoms. By the end of two months and a half, recovery was complete except for slight weakness in that leg. Intraspinal injection of 2 per cent. magnesium sulphate attenuated remarkably the pains and spasms, although it did not shorten the course of the disease.

67. **Aviator's Heart.**—Etienne and Lamy found in examining thirty aviators, including a number apparently healthy, that the left ventricle was enlarged, the apex rounding. This occurs early and persists, and is more pronounced the higher the flights. The hypertrophy keeps moderate, and there was associated dilatation of the right heart only in one instance. They warn aviators against useless feats, sudden changes of level, and abrupt rises and descents when such unnecessary strains on the circulation can be avoided. With care, the heart which has thus adapted itself to aviation will function normally.

68. **Opium in Heart Disease.**—Laubry and Esmein expatiate on the harmlessness of morphin and its success in many cases of heart disease. They regard the symptoms from cardiovascular affections as the result of physical rather than chemical forces, more dynamic and mechanical than toxic. There is no need with them to fear the specter of elimination of waste and danger from its brief partial suspension. The beneficial action of morphin on the vasomotor nerve centers can thus be utilized to the full. It usually reenforces the action of the usual heart tonics, and paves the way for the more slowly acting drugs to display greater efficacy. When the distress of angina pectoris persists under the usual measures, morphin should be injected and even repeated, warning the family of the gravity of the circumstances and that abstention may be graver than the injection. The same is true, they say, of acute edema of the lung, agreeing with Vaquez "that the injection of 0.01 or 0.02 gm. morphin is the best means to remedy the sudden danger which results from an attack of acute edema of the lung." Whatever the cause of the acute pulmonary edema, there occurs a sudden vasodilating excitation of the vessels in the lungs. In this sudden upset of the vasomotor balance, entailing a sudden profuse bronchopulmonary secretion, obstructing the air passages, why not utilize the drug which has an instantaneous sedative action on the vasomotor and secretory centers? Some are deterred from it by the fear of paralyzing some salutary secretion, especially renal secretion, and adding a drug poison to the unknown poisons from which the organism is already suffering. But in Vaquez' and the writers' experience they have always had cause for rejoicing that they had not been frightened away from its use. They always apply local or general venesection, with or without camphorated oil, but it was almost the constant impression that the subsidence of the secretory storm was the result of the sedative injection. In some cases of recurring pulmonary edema with aortic disease of different kinds, the morphin alone proved as effectual as when associated with venesection, when conditions prevented the latter. The same favorable result was obtained even in a case of sudden edema with high blood pressure and advanced kidney disease. Morphin is equally effectual also in relieving the mechanical, secretory and nervous disturbances entailed by paroxysmal hypertension, as in lead colics, sudden amaurosis, transient aphasia, asthmatiform attacks, and dyspnea without organic cause. Even in cases of albuminuria with high blood pressure and scanty urine, the attacks of dyspnea subsided under the morphin, the pulmonary and renal symptoms disappearing

together as a flood of urine was voided. The oliguria which seemed to contraindicate the morphin must have been itself the result of some spasm of the renal vessels. With permanent high tension, greater caution is necessary, but they have often relieved continuous dyspnea and insomnia in these patients with 0.2 gm. Dover's powder plus 0.1 gm. digitalis powder. They discuss further the indications for morphin in actual heart disease. With pulmonary embolism, congestion and acute edema, a local injection of morphin arrests the dyspnea and a Dover's powder maintains the salutary immobilization, and by keeping the entire organism quiet suppresses other factors liable to further hamper the heart. Paroxysmal tachycardia may also be relieved by the opiate when the pains and distress resemble those of angina pectoris. Among the formulas given is one in which 0.02 gm. each of caffein and pulverized opium are mixed with 0.2 gm. each of quinin sulphate and antipyrin. A cachet of this can be ordered every three hours, thus keeping the patient under the influence of mild opium medication for several days. To soothe attacks of pain, when instantaneous action is not imperative, they combine morphin with the rapidly diffusible vasomotor drug, trinitrin. Their formula calls for 0.06 gm. morphin hydrochlorid; 60 drops of a 1 per cent. alcoholic solution of trinitrin; 20 gm. distilled cherry laurel water, with plain distilled water q. s. to 100 gm. Two or three teaspoonfuls of this can be taken during the day.

69. **Juvenile Arrhythmia.**—Gallavardin describes six cases of total arrhythmia without valvular lesion. Some of these arrhythmias seem to cause no disturbance, but the outlook is much graver than with simple extrasystolic arrhythmia.

70. **Rupture of Heart Valve.**—In the man of 36 and woman of 46 the rupture occurred from shell concussion, without direct injury, but obesity or other predisposing cause was manifest.

71. **Slow Malignant Endocarditis.**—Debré describes the anemic, the pseudomalarial, nervous and rheumatismal forms among others, and mentions a psychic form. The streptococcus can usually be incriminated, but the pneumococcus, influenza bacillus, etc., may sometimes be responsible. In one case, in a child of 8, the typhoidal state and joint troubles were not accompanied by any appreciable symptoms on the part of the heart, and the endocarditis was only casually discovered. It proved fatal in less than five months. This type of endocarditis is most frequent in adolescents and young adults, and almost invariably there is an old history of acute articular rheumatism, with some recent infectious sore throat or other process in the mouth or in the female genitals. The skin manifestations are of primordial importance; purpura is more frequent, but the pathognomonic manifestation is a *transient* and painful erythematous eruption, minute red lumps appearing in successive waves on different regions of the skin. The pulpa of fingers and toes is a favorite site. The sudden appearance of this special eruption at the tip of the finger may suggest a coming felon. Periods of apyrexia may intervene, but the disease is always fatal in from six to twelve months.

72. **Serofibrinous Pericarditis.**—This affection should always suggest a tumor in the mediastinum. In a case described, necropsy revealed two tumors, and the pericarditis was symptomatic of the irritation from them.

Presse Médicale, Paris

Oct. 24, 1918, **26**, No. 59

74 *Epidemic Jaundice in Roumania. J. Cantacuzène.—p. 541.
75 *Tumors of Large Intestine. V. Pauchet.—p. 543.
76 *Secondary Endocarditis in Heart Disease. R. Lutembacher.—p. 546.
77 Present Status of Icterohemorrhagic Spirochete. M. Romme.—p. 548.
78 *War Wounds of Nerves. Congress Report.—p. 549.
79 *Treatment of Gonorrhea. Congress Report.—p. 551.

74. Practically the same article was reviewed November 23, p. 1779.

75. **Tumors of Large Intestine.**—Pauchet has had very favorable experiences with resection of long segments of the large intestine for inflammatory and tuberculous tumors and for cancer. Once released from its moorings, the large intestine can be pulled around as readily as the small intestine. The ultimate outcome depends on the character of the cancer, and cancers of the large intestine are among the less virulent. By leaving a strip of the mesentery and the marginal artery the circulation is guarded, while the anatomy of the lymphatics of each segment of the colon allows the segment and its blood and lymph vessels to be removed in one block. He gives illustrations of the technics required for tumors at different points in the bowel. If there is occlusion he makes an artificial anus and waits a month before resecting the tumor. If the bowel is still permeable, for a tumor in the descending colon, he draws the loop out and makes a side-to-side anastomosis at once, or keeps the tumor loop thus exteriorized for a week, first suturing together, like two gun barrels, the legs of the loop just below the skin. After cutting off the projecting portion level with the skin, he waits a month before the final anastomosis of the stumps. A tumor in the sigmoid region he resects at once, and ties the upper stump on a rubber tube and invaginates this in the rectum by drawing down with forceps the lower end of the tube and out through the anus. The tube drops out *spontaneously* in about ten days. With a tumor in the transverse colon, he makes an end-to-end anastomosis after resection, fastening the point of junction to the abdominal wall. The worst that can happen is an abscess in the wall, with a briefly transient fistula.

76. **Secondary Endocarditis in Heart Disease.**—Lutembacher says that infectious endocarditis is responsible for the fatal outcome with valvular defects more often, probably, than asystoly. In such patients, any intervention on the veins requires the most minute asepsis, as the dilated cavities of the heart offer a peculiarly favorable site for location of an infectious process. If this process is of an abortive type, fever is its only manifestation. It keeps up irregularly for months, sometimes accompanied by chills and malaise, but its essential character is its extreme tenacity. The preexisting heart lesion does not seem to be modified, and the fever is ascribed usually to every cause but the right one. By the end of six or twelve months, however, the debility becomes extreme and death may ensue, even without embolism, a minute abscess in the wall the only necropsy finding. In the subacute form, septic thrombosis and embolism dominate the clinical picture. These are particularly redoubtable when it is a question of pregnancy or an operation or overexertion of any kind. It is by escaping such secondary infectious complications that some persons with serious valvular defects live to an advanced age while others with milder lesions die young. Treatment of these secondary infectious processes is discouraging. Intravenous injections of colloidal metals do no good, and he has never witnessed any benefit from specific serums and vaccines. Heart tonics had better be suspended as they lose their previous efficacy. This secondary infectious endocarditis is one of the main causes of what is called irreducible asystoly.

78. See Paris Letter, page 1759.

79. **Treatment of Gonorrhea.**—This was the leading question discussed at the French Urologic Congress in October, and the main addresses are summarized here. The reports bear on both military and civilian conditions. Janet related that abortive treatment is successful in about two third of the cases provided that it is begun within twelve hours after the first signs of a discharge. He has found antigonococcus vaccine beneficial in gonorrheal rheumatism, and he thinks a vaccine may yet serve in local treatment of the primary gonorrheal process when the technic is better worked out. Cathelin stated that, at most, the vaccine is useful only for the complications of gonorrhea and has no influence on the evolution of the urethritis itself. The *centre d'urologie* of the fifth district had 300 simple and 704 complication cases in the hospital; all the others were outpatients and 25,000 treatments were given. He urged standard uniform treatment with permanganate, but Hamonic extolled the advantages of iodin vapors pumped directly into the urethra from the iodin heated in an ampule. Le Fur warned that the seminal vesicles are involved more often than is generally recognized, and this explains return of symptoms, when the gonorrhea had been apparently entirely cured.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Nov. 2, 1918, **48**, No. 44

80 *Progress in Ophthalmology. O. Haab.—p. 1457.
81 *The Tenth Rib. H. Frey.—p. 1463.
82 *Influenza in Children. H. Schultheiss.—p. 1467.
83 *Predetermination of Sex. P. Scheurer.—p. 1473.

80. **Recent Progress in Ophthalmology.**—Haab insists that the new legislation on industrial accidents and workmen's compensation makes it imperative for the general practitioner to be able to recognize and apply first treatment to injuries of the eyes. Intensive illumination from the side in examining the eye with the magnifying glass is imperative. A 150 candle power electric light is his preference; the ordinary street electric current suffices for this. A binocular magnifying glass or corneal microscope is extremely useful, especially when used with Gullstrand's Nernst *Spalt* light. Gullstrand's magnifying stereoscope for examination of the eye is also a great assistance in examinations. Another recent improvement is the use of light free from red rays, as Vogt advocates. In teaching ophthalmology Haab lays great stress on wax models and on demonstration microscopes. He keeps two of the latter where the students have constant and ready access to them, the specimens being turned by hand into the field, while they are locked in against injury. The Swiss government has appointed a woman artist to make wax models and casts for the clinics as needed. One model of the half of the head of a lad with tuberculosis of the cornea shows the suppurating fistula of the lacrimal sac and swelling of the glands in front of the ear—a typical case of Parinaud's conjunctivitis, in which tubercle bacilli of the bovine type were cultivated from the lesions. There was a history of a blow on the eye with a stable broom three months before the first symptoms. Under tuberculin treatment and diverting the secretions of the lacrimal gland into the nose, the cure is now practically complete fifteen months later. Catheter treatment of dacryocystitis seldom proves effectual.

Further progress in ophthalmology has been realized with roentgen treatment of cancer of the eyelids, but the greatest advance in recent years, he declares, is the treatment of gonorrhea of the eye by subcutaneous injection of 1 c.c. of a typhoid bacilli vaccine, containing 5 millions, the injection repeated the next day, or later. This method was advocated in 1917 by Szily and Sternberg who reported the complete cure in a few days of sixty-eight cases in adults. Haab tried it with considerable skepticism on a girl of 5 with violent inflammation of the eye. In two days the eye was free of secretions and cocci. In his five other cases the results were not so promptly apparent, but the cure was complete in all in two or three weeks, and injury of the cornea averted. The adult typhoid cultures, grown on agar, are washed off with saline and the suspension is brought to 200 c.c. It is then vibrated for half an hour, and 0.5 per cent. phenol added. More than two injections can be given at need. There is a brief febrile reaction; then in two or three days the inflammation in the eye subsides and the cocci disappear. The effect is less pronounced in ophthalmia neonatorum, but in one new-born child the severe gonorrheal ophthalmia had completely healed in two weeks, a result attainable otherwise only in from five to eight weeks. We know that the new-born do not react to vaccination as a rule. Genital gonorrhea in young and old does not seem to be affected by the typhoid vaccine.

81. **The Floating Tenth Rib.**—Frey is an anatomist, and he insists that the floating tenth rib is not pathologic but a normal phenomenon for a certain stage of phylogenetic development.

82. **Influenza in Children.**—Schultheiss states that while at first children seemed to escape influenza, the last few weeks have brought numbers of cases to the children's hospital, and there have been five deaths. The children did not succumb to respiratory disturbance so much as to the general toxic action of the infection, with the respiration typical of acidosis. Three children with whooping cough in one family all died, the blood in two showing 100,000 leukocytes with predominance of lymphocytes. In one case a child developed typical Landry's paralysis and in another paralysis of one arm, the eighth day. The paralysis in both gradually subsided but not completely.

83. **Predetermination of Sex.**—Scheurer analyzes the four main theories as to the predetermination of sex, those based on the assumption that the sex is preformed in the ovum or determined by the special structure of the spermatozoön, or by the battle of the sexes from the same or crossed heredity from the parents, or the assumption that the sex is determined by the age of the ovum at the day of conception. His conclusion is that the problem is still unsolved, but that the latter theory has much to sustain it. He describes Siegel's statistics in this line. (They were mentioned in The Journal, March 17, 1917, p. 883.) He found that in 180 cases in which the exact day of the husband's brief furlough was known and the date of the beginning of menstruation, 80 per cent. were boys of those children born when cohabitation had been within the first nine days after the beginning of menstruation; 80 per cent. were girls of those with cohabitation the fifteenth to the twenty-third day. Between these periods the sexes were about equally divided. From the twenty-fourth to the twenty-sixth day no conception occurred, and the twenty-seventh day only a total of five boys were born. If the proof can be produced that an ovum can actually survive menstruation, then Siegel's theory would have a basis. One observation on record sustains this, His' report of having found an unfecundated ovum in the human tube at the fifth day from the beginning of menstruation.

Gazzetta degli Ospedali e delle Cliniche, Milan

August 18, 1918, **39**, No. 66

84 Measurement of the Velocity of the Blood Stream by Radioscopy of the Heart Compared with Sphygmodynamometer Findings. C. Talentoni.—p. 643.

Pediatria, Naples

November, 1918, **26**, No. 11

85 Leukolysins in Leukopenic Blood. M. Sindoni.—p. 617.
86 *Tuberculids in Children. A. Gismondi.—p. 635.

86. **Tuberculids in Diagnosis and Prognosis of Tuberculosis in Children.**—Gismondi discusses in particular the papulonecrotic type of tuberculids and their frequently grave prognosis. The literature cited confirms the unfavorable outlook with this form of tuberculids. They are generally found on the back, buttocks and limbs. In none of the cases described had there been preceding measles, although others have reported the development of these tuberculids after measles. In one case, however, there was a widespread eruption of tuberculids accompanying a tuberculous bronchopulmonary process following on scarlet fever. This child was 6 years old, with manifestations of inherited syphilis. The papulonecrotic tuberculids may be the only sign of tuberculosis in an infant or older child. By seeking them, many a puzzling diagnosis may be cleared up at once.

Policlinico, Rome

Oct. 27, 1918, **25**, No. 43

87 *Factors in Freezing of Feet. V. Mazzi.—p. 1017.
88 *Bleaching Powder in Sterilization of Skin. G. Egidi.—p. 1023.

87. **Freezing of the Feet.**—Mazzi's experience with trench freezing and frost-bite has shown that the humidity of the air is the predominant factor, next in importance is the long standing still. The cold itself is only third in importance.

88. **Bleaching Powder for Sterilization of the Skin.**—Egidi extols the superior advantages of chlorinated lime for sterilizing the skin, its efficacy, harmlessness, and lack of irritating properties for the hands of the physicians and nurses. He has been using it systematically in a saturated solution in his service for many months. As it turns blood and raw surfaces brown, he has found this a useful guide in excising devitalized tissues. (The Italian term is *cloruro di calce.*)

Riforma Medica, Naples

Sept. 28, 1918, **34**, No. 39

89 *Plantar and Popliteal Reflexes. A. Roccavilla.—p. 766.
90 *Comparative Nutritive Value of Cereals and Eggs. M. Maurizi.—p. 768.

91 Prophylaxis of Anaphylaxis by Small Preliminary Injection of Serum. A. Azzi.—p. 774.
92 Galileo and the Medical Sciences. A. Ferrannini.—p. 777.

Oct. 5, 1918, **34**, No. 40

93 Influenza. G. Arnone.—p. 786.
94 Hemorrhage After Nephrotomy. P. Tasca.—p. 790.
95 Scurvy in Italian Troops in Macedonia. C. Vallardi.—p. 793.
96 Tuberculosis of Male Genital Organs. E. Aievoli.—p. 794.

89. **Popliteal and Plantar-Cremaster Reflexes.**—As the subject lies prone and the popliteal space is tapped, certain physiologic reflexes occur. Roccavilla discusses the pathologic import of variations in the reflexes thus induced, and also in the variations in the cremaster reflex induced from the sole.

90. **Comparative Nutritive Value of Foodstuffs.**—Maurizi reviews recent investigations in this line, and reports personal research on rats. All tend to demonstrate that wheat and corn or their pure proteins have less nutritive value than eggs. It may be impossible to demonstrate this inferiority by a deficit in the nitrogen balance, but it becomes plainly manifest in the reduction in body weight.

Rivista Critica di Clinica Medica, Florence

Oct. 5, 1918, **19**. No. 40

97 *Pathology and Treatment of Asthma. R. Massalongo.—p. 469.

97. **Suprarenal-Pituitary Treatment of Asthma.**—Massalongo discusses the pathology of asthma as a perversion of the physiologic act of respiration. There is a centripetal and a centrifugal factor involved, and he regards the latter as of paramount importance while most clinicians incriminate almost exclusively the centripetal influence. He is convinced that the latter is merely the occasional cause. It is useful to get rid of this factor, but the primal factor is the inherited or acquired asthmogenic state of the medulla oblongata. It is a neurosis of the bulb and, in particular, of its respiratory center. There seems to be a close analogy between asthma and epilepsy. Persons with asthma have always proved to be neurotic, neuropathic, in his clinical experience. Treatment should aim to discover the source of the peripheral or internal centripetal irritation inciting the paroxysm, but the main point of attack should be the morbid sensitiveness of the asthmogenic center. The nervous system should be toned up by treatment as for neurasthenia, but the chief reliance should be on combined epinephrin and pituitary treatment. This, he says, has given marvelous results impossible to realize with either alone. He does not hesitate to call it an *infallibile metodo di cura dell' accesso astmatica*, and to say that his eight years of experience with it have fully determined its reliability. The dose found most effective was 0.0008 gm. of epinephrin (adrenalin) and 0.0004 gm. of pituitary extract (pituitrin), in solution in 1 c.c. injected subcutaneously. Even as little as 0.0002 gm. may prove effectual. The prompt action suggests that vasomotor paresis in the medulla oblongata may be the cause of the attack of asthma, as these substances overcome any such tendency at once. Their immediate efficacy further confirms the conception of the medulla as mainly responsible for the asthma.

Annaes Paulistas de Medicina e Cirurgia, S. Paulo

May, 1918, **9**, No. 5

98 *Diffusion of Antivariola Vaccine in Glycerin. T. Bayma and A. Medeiros.—p. 97.
99 Typhoid at S. Paulo. B. R. Pestana.—p. 101.
100 Various Therapeutic Experiences. C. Ferreira.—p. 116.

98. **Diffusion of Filtrable Viruses Through Glycerin Vehicle.**—April 13, 1918, p. 1123, THE JOURNAL summarized Remlinger's statements in regard to the diffusion of rabies virus through the fluid in which tissues from rabid animals had been submerged. Bayma and Medeiros have had similar experiences with the glycerin in which cowpox material had been soaked, and they remark that the same probably will occur with any of the thirty ultramicroscopic viruses known at present. Photographs of children and of calves vaccinated with the glycerin thus left in contact with the cowpox pulp show typically fine vaccination pustules, sometimes even when the glycerin had been thus treated only for three days. The pustules in the children developed silently, without any local or general reaction; at most there was only a red border to the pustule. The cowpox virus seems to be more readily diffusible than rabies virus. None of the experiments gave negative results in any of the twenty of the five different series, while Remlinger had sixteen failures in his ninety animals with rabies virus and eleven died of septicemia. The same positive result was obtained in Bayma's eight children, there being scarcely any failures when there had been six days of contact. Parallel vaccinations with the usual whole vaccine showed constantly a more pronounced local reaction than with the glycerin alone, but in all the experiences, in the human and in animals, the typical pustule effect was unmistakable.

Brazil-Medico, Rio de Janeiro

July 27, 1918, **32**, No. 30

101 Gregarina Parasites of Arthropods. C. F. Pinto.—p. 233.

Aug. 3, 1918, **32**, No. 31

102 Flagellate Parasites. O. O. R. da Fonseca.—p. 241.
103 *Arsenical Treatment of Syphilis by the Rectum. S. Araujo, Jr.—p. 241. Commenced in No. 30, p. 234.
104 Some Clinical Notes. R. da Silva.—p. 243.

103. **Arsenical Treatment of Children by Way of the Rectum.**—Araujo reviews the extensive literature that has accumulated on the administration of arsphenamin preparations by enteroclysis. His list includes Oulmann and Wollheim's article in THE JOURNAL, Sept. 13, 1913, p. 867. They declared that the intrarectal route should be given the preference for children, and Araujo agrees with them, except that he regards mercury as the ideal remedy for syphilis in children. But when mercury fails, or exceptionally prompt action is necessary, or for other reasons arsphenamin is to be preferred, the enteroclysis method offers superior advantages for children. He reports four cases in detail, out of a much larger experience, emphasizing that he never witnessed any phenomena indicating a reaction, while the syphilitic lesions rapidly healed, even those in which spirochetes abounded. The results were invariably good, and the technic is the simplest possible. He used a 20 c.c. syringe and small Nélaton catheter. The bowels were emptied first, when possible, and the child constipated with paregoric, or 1 or 2 drops of laudanum were added to each injection. One female infant of 2 months was given a rectal injection of 0.03 gm. of Billon's 914 in 10 c.c. of distilled water, with 1 drop of laudanum. The injection was retained ten hours. Six days later another injection was given, which was retained only half an hour; two days later the injection was repeated with a dose of 0.08, retained for twelve hours. Five more injections were given, the last three with 0.10. Notwithstanding these large doses, there was never any appreciable reaction, and by the fourth, marked improvement was apparent, the papulous syphilids and patches in mouth and around the anus and vagina having completely retrogressed. The children were given usually about six intrarectal injections in doses of from 0.05 to 0.10 gm. at five or eight day intervals. The injection was generally retained from six to eight hours.

Gaceta Medica de Caracas

Sept. 30, 1918, **25**, No. 18

105 *Symposium on Ambard's Constant. V. Ruiz, L. Razetti, A. Benchetrit and J. B. Ascanio.—p. 187.

105. **Ambard's Ureosecretory Constant.**—Razetti laments that to date we have no reliable index of whether the liver and kidneys are able or not to stand general anesthesia. This can be estimated to date only by the comparison of the clinical data. Biologic chemistry has not given us yet the reliable guide which the surgeons are clamoring for. Even Ambard's constant has not proved to be the longed for practical guide in this line, whatever its usefulness otherwise. Benchetrit related that he has dropped the Ambard formula as its practical value does not compensate for the complicated technic required, especially, he adds, as the training of medical students in mathematics is in inverse proportion to the square root of the necessities of modern medicine—to parody Ambard's law. But from the purely scientific standpoint, he lauds the discovery of Ambard's laws as a gigantic progress, lifting medicine from empiricism toward the high station of an exact science.

Repertorio de Medicina y Cirugia, Bogotá

September, 1918, **9**, No. 12

106 *Stab Wound of Spinal Cord. E. Montaña and M. Rueda.—p. 623.
107 *Paraurethral Passages. R. Zapata.—p. 644.

106. **Stab Wound of Spinal Cord.**—Montaña and Rueda comment on a case of compression of the spinal cord by a fractured vertebra with partial section of the cord. The operation was restricted to lifting up the compressing lamina with probe and fingers, and clearing out sequesters and clots from below, leaving a rubber drain tube. Relief was immediate and recovery followed, but certain sequelae suggest that it would have been better to perform laminectomy at the time. They remark, however, that this is perhaps the first case of recovery after such a serious injury of the spinal cord, notwithstanding the timid and simply exploratory operation. The symptoms indicated that the right posterior roots and cords had been severed, along with the direct and crossed pyramidal tracts of the same side.

107. **Para-Urethral Passages.**—Zapata refers to the diverticuli or the passages from infected glands which are found opening into the urethra in gonorheal urethritis. They must be treated by catheterizing the minute passage, massaging the gland over a straight Beniqué, following with injection of some modifying substance such as silver nitrate or iodin. If these measures fail, the passage must be cut open its entire length.

Revista Clinica, Medellín, Colombia

September, 1918, **3**, No. 10

108 *The Pains with Abdominal Disease. G. J. Gil.—p. 450.
109 Gummatous Meningitis. G. T. Villa.—p. 466.
110 Cerebral Syphilis. S. Serna G.—p. 473.
111 Appendicitis with Ascarides. F. Osorio V.—p. 479.
112 *Medical Ethics. N. A. Rojas.—p. 491.

108. **Abdominal Pain in Diagnosis.**—In the case described the young woman for about eight months had been having digestive disturbance, constantly growing more pronounced and finally accompanied by intense pain in the epigastrium, not radiating, and not constant, sometimes soothed and at other times aggravated by eating, occurring at times before and at other times after eating. Occasional vomiting but no blood in vomit or stools. The epigastrium and appendix region were extremely tender. A gastric ulcer had been assumed, but the operation revealed that the appendix was drawn up by a kink in the mesentery, thus pulling on the region above, and inducing spasm of the pylorus. All disturbances ceased at once after appendicectomy. Gil compares with this case of appendicular dyspepsia the other abdominal affections liable to induce pain, emphasizing the various differential features of the pains. The appendix disturbances in his case were chronic from the start, as also the variation in the pain from day to day and from meal to meal. He advises to keep the patient under observation for a week and watch the type of the pains. He warns that with visceroptosis removal of the appendix will not banish all the symptoms. Chronic constipation with acute attacks of colic is also liable to prove misleading.

112. **Medical Ethics.**—Rojas discusses medical deontology in general terms, citing Faguet, Brouardel and others. He emphasizes in particular that as the principles of ethics should guide the physician's dealings with his colleagues and his clients, they should also guide his pen in his published works of a scientific nature.

Revista de la Universidad de Buenos Aires

August-September, 1918, **38**, **39**, No. 137

113 *Ruptures of the Uterus. J. B. González.—p. 347. Conc'n.
114 The First Curriculum, 1822. R. Levene.—p. 511; A. Saenz.—p. 520.
115 Research on the Double Decomposition of Silver Nitrate and Ammonium Bicarbonate. O. F. F. Nicola.—p. 539.
116 Influence of the Soil on Evolution of Cancers. A. H. Roffo.—p. 567.

113. **Rupture of the Uterus.**—This 152 page instalment of González' monograph brings the total to 209 pages, with sixty-three illustrations. He reviews the history of the subject from Hippocrates to date of writing, the causes, remote and direct, and tabulates the indications for treatment, with the outcome in twenty-six cases. In only one of his spontaneous rupture cases was the uterus in such a state of degeneration that the rupture was inevitable. In all the others it could probably have been avoided with extra care. He declares that podalic version is dangerous even when done by an expert. The condition of the resistance of the uterine wall should be ascertained before attempting it, investigating the obstetric and gynecologic history, and examining the uterus, especially the cervix, with palpation and the speculum. The measures required to combat the hemorrhage are liable to aggravate the state of shock and invite peritonitis, the main complications. Iodoform gauze drainage alone proved successful in the four cases in which it was applied, but this is possible only when the primary hemorrhage is slight, and there is always danger of its starting up again. Tamponing with iodoform gauze by the genital route is difficult, insecure and dangerous, as he shows by some necropsies. It is liable to kink and interfere with the nutrition of various tissues. In two of his cases abscesses formed in the vicinity. At the same time, it gave him 71 per cent. of recoveries and one continuous series of nine successful cases. In those with unfavorable outcome, the aggravation of the prognosis was due to the further injury from hastening the extraction of the fetus. Only in exceptional cases is it necessary to apply the tampon through a laparotomy incision. In his total cases, 52.35 per cent. of the women recovered.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

Sept. 21, 1918, **2**, No. 12

117 Professor C. Winkler. C. A. Pekelharing.—p. 917.
118 *Medical Significs. G. van Rijnberk.—p. 941.
119 *The Behavior of the Kidneys in Respect to Glucose. H. J. Hamburger.—p. 943.
120 Rapid Cure of Scabies. W. J. Bais.—p. 953.
121 Subphrenic Abscess After Pseudo-Appendicitis. H. A. Lubbers.—p. 955.

118. **Medical Significs.**—"Significs" and "semiantics" are recently coined terms to express workmanship in words, word-craft, and the deeper meaning of words. Van Rijnberk here commences a series of comments on medical word-craft.

119. **Behavior of Kidneys in Respect to Sugar.**—Hamburger recalls that sugar is always found in the blood but that it does not occur in normal urine. His research has apparently demonstrated that this difference is due to the fact that the membrane of the glomeruli possesses the property of holding back free glucose. This property of the membrane is influenced by the chemical composition of the fluid circulating through the glomeruli. In experiments on the frog, if the fluid passed through the glomeruli contained certain proportions of calcium, sodium and potassium, then the artificial "urine" after addition of 0.1 per cent. glucose contained 0.07 per cent. glucose, showing that 0.03 per cent. had been retained. Increasing the proportion of $NaHCO_3$ to 0.285 per cent., that is, to the proportion which normally occurs in the frog serum, then the glomeruli membrane holds back still more of the sugar, and the artificial "urine" is entirely free from sugar although the fluid passed through it contains 0.1 per cent. of glucose. The absence of sugar from normal urine is thus shown to be a phenomenon of permeability, and there is no reason for assuming any hypothetical binding of sugar with some colloidal substance—the *sucre virtuel* of Lépine. We have thus here a new form of physiologic permeability, in which the cells, under physiologic conditions, although readily permeable for salts, yet refuse to permit the passage of the equally crystalloid glucose. These researches throw light on the action of the usual therapeutic measures in diabetes and on phlorrhizin diabetes. Owing to the anatomy of the frog kidney, it was impossible to determine the share of the tubuli in this retention of sugar.

Hygiea, Stockholm

Oct. 16, 1918, **80**, No. 19

122 The Development of the Treatment of Syphilis During the Centuries. J. Almkvist.—p. 1105.

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PROPHYLACTIC INOCULATION AGAINST PNEUMONIA

A BRIEF HISTORY AND THE PRESENT STATUS OF THE PROCEDURE [*]

E. A. FENNEL, M.D.
Lieutenant, M. C., U. S. Army
WASHINGTON, D. C.

We have just passed through—or rather, are passing through—a pandemic of disease, the gross and microscopic pathologic anatomy of which seems to be fairly constant in the hands of many observers and investigators, but concerning the etiology of which we continue to remain in much doubt. This pandemic had high incidence and mortality rates. In the great majority of cases, death was directly due to a bronchopneumonia. In those cases in which a bronchopneumonia developed, the death rate was so high as to be the cause of a panic, which made itself evident in the use of a wide variety of unjustified therapeutic and prophylactic measures.

It is too early as yet to draw any definite conclusions as to the bacterial etiology of the disease. Apparently well founded opinions have been advanced by experienced investigators setting forth diametrically opposed views. Since all the evidence is not yet, by any means, collected, conclusions would be premature and probably fallacious. Whether the cause has been the Pfeiffer bacillus, which has taken on extreme virulence, or whether a filtrable virus, or a streptococcus, *S. viridans* or *S. hemolyticus*, or a heretofore unidentified gram-positive coccus, it is too early to say. Whether the pneumococci of fixed or heterogeneous type are the true etiologic factors in this pandemic, which has cost the world so much in suffering, death and economic values, is not to be determined at this time.

It seems, however, to be agreed by competent observers that the disease itself was one of but transient duration, of from three to five days, in uncomplicated cases; bronchopneumonia was the most frequent of the complications or sequelae; and when this condition superimposed itself, pneumococci were found with regularity in the nose, mouth, pharynx and sputum of these patients. Since the mortality in the cases of bronchopneumonias was very high (during the height of the pandemic, 50 per cent. would have been a conservative estimate), ample opportunity for necropsy presented itself. Direct smears from lung tissue, and cultures from lung, bronchi, heart's blood, pleural, pericardial and peritoneal fluid, and from the spinal canal demonstrated the same regularity of the presence of pneumococci of the fixed and heterogeneous types. The presence or absence of other organisms does not bear on the subject in hand, though it might be said in passing that in a high proportion of cases, when careful technic was used, the pneumococci were found in pure culture. This fact has again stimulated research work on the pneumococcus, and has caused investigators and practitioners throughout the world to inquire, "Just what is the present status of prophylactic inoculation against pneumococcal infections?"

A bird's eye view of this subject presents, first, the great preponderance of the work on therapeutic measures in contradistinction to prophylactic measures, and, secondly, the apparent apathy of the profession as a whole concerning the prophylaxis of a disease that is of such vital and economic importance.

Theoretically, any disease of microbic origin, in which spontaneous recovery is at all possible, should yield to specific prophylactic measures. That recovery from pneumonia is spontaneously possible has long been known. During the years from 1881 to 1885, Pasteur[1] and Sternberg[2] produced a fatal septicemia in rabbits, and Frankel[3] and Weichselbaum[4] established the causal relationship of *Diplococcus pneumoniae* in lobar pneumonia. This was a great step in advance; but, though a large amount of work was done in the interim, some of which was highly confusing, it was not until Neufeld,[5] in 1900, determined the diagnostic value of the fact that pneumococci are soluble in bile, that the next step was taken. This knowledge enabled investigators to fix their attention on pneumococci, and rule out those bacterial forms so similar in morphology and cultural characteristics.

It had been noticed, however, that strains of pneumococci from different sources have different properties.

In 1909, Neufeld and Händel[6] definitely established the fact that some strains of disease-producing pneumococci had truly measurable antigenic properties. By injecting into animals a vaccine of a particular strain of pneumococci they were able to awake in that animal an immunity response. They also devised the method for measuring that immunity by conferring a passive immunity on a white mouse by injecting it with serum from the vaccinated animal, and then subjecting that mouse to an otherwise fatal dose of living pneumococci of the same strain. This fact, concerning that particular Neufeld strain of pneumococci (which later became the Group 1 of Dochez and Gillespie, or Group C of Lister), is the basis on which prophylactic inoculation against lobar pneumonia is built.

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[*] From the Department of Pathology, Army Medical School.

1. Pasteur, L.: Bull. de l'Acad. de méd., 1881, Series 2, p. 94; Compt. rend. Acad. de sc., 1881, **92**, 159.
2. Sternberg, G. M.: Bull. Nat. Board of Health, 1880-1881, **2**, 781.
3. Frankel, H. Z.: Klin. Med., 1886, **10**, 426.
4. Weichselbaum, A.: Med. Jahrb., 1886, n. f., **1**, 483.
5. Neufeld, F.: Ztschr. f. Hyg., 1900, **24**, 454.
6. Neufeld and Händel: Ztschr. f. Immunitätsforsch., Orig., 1909, **3**, 159.

We were then on a footing where rapid strides could be made. A therapeutic serum was the direct outcome of the foregoing discovery, but interests us, in prophylaxis, only in passing. The predominant fact stood out that a certain strain of disease-producing pneumococci could stimulate, in an animal, a specific immunity response to that one particular strain. The word "group" should replace the word "strain," for it was found that the "Neufeld strain" was not limited to a race of pneumococci, but was found as Type I in widely separated cases.

GROUPS OF PNEUMOCOCCI

The logical outcome of this work was an investigation of the groups into which pneumococci might be divided, on a basis of their ability to stimulate *specific* antibody production.

In 1913, Dochez and Gillespie[7] in America, and coincidentally, though independently, Lister[8] in South Africa (where lobar pneumonia has been a problem of paramount importance), published their classification of the groups of pneumococci. Dochez and Gillespie used the protection tests of Neufeld, and specific agglutinations to evaluate their results; Lister used phagocytosis and specific agglutinations to arrive at his conclusions.

Dochez and Gillespie divided all pneumococci into four groups:

Group I (the Neufeld strain), distinct in its antibody stimulation.

Group II, culturally indistinguishable from Group I, but specifically distinct in its antibody stimulation.

Group III (*Pneumococcus mucosus*), identified by its morphology and its peculiar cultural characteristics. (Later its specific antibody stimulation was more definitely brought out.)

Group IV, all strains that would not fit into the preceding groups, irrespective of the fact that they stimulated an antibody specific for the strain, or stimulated no antibody. Into Group IV fit many of the saprophytic strains found in human mouths.

Lister was able to carry his classification somewhat farther than Dochez and Gillespie because of the greater multiplicity of groups prevalent in South Africa, and because of his added work in the heterogeneous group.

While the original classification of Dochez and Gillespie still stands, and is now quite familiar to the profession in America, Lister's classification has undergone additions until now he groups them as A, B, C, D, E, F, G, H, J, K, X and unclassified. Group A, numerically most important in South Africa, is unknown in America. Groups B, C and E are identical with Dochez and Gillespie's Groups II, I and III, respectively.

In general, Lister classified the pneumococci into a number of groups, ten in number, into which most pneumococci may be classified according to their group antigenic qualities, another group into which strains stimulating antibodes only against the specific strain, and an unclassifiable group into which are placed those few strains (3.3 per cent.) that give rise to no antibody production when injected into animals.

The relative importance, as measured by incidence and mortality of the pneumonias caused by these several types, varies from time to time and with localities. This fact does not seem to have been accorded the recognition it might better have received. While Groups A, B and C are of prime importance on the Rand, Group H, in a localized epidemic, suddenly sprang into prominence, and had to be specifically considered in prophylactic measures. The numerical preponderance of certain types of pneumococci in certain localities, during the pandemic, has called attention to this fact. The recent report of Friedlander and co-workers[9] at Camp Sherman called attention to this phase of the subject. They reported an incidence of about 80 per cent. of Type IV in their pneumonias. An analysis of these IV's and a consideration of them in the construction of a vaccine for use in that particular locality would have been logical. That such an analysis is feasible is indicated by the work of Olmstead,[10] and should be carried farther.

Particular attention is directed to Lister's classification, for two reasons; first, because it emphasizes the need of further investigation and classification within our American Group IV, and, second, because it demonstrates the multiplicity of factors to be considered in specific prophylaxis against lobar pneumonia.

WORK OF WRIGHT AND OF LISTER

It is unfortunate that so great an authority as Sir A. E. Wright, and his co-workers, should have undertaken an extended experiment in the inoculation of a large number of mine workers, in South Africa, at a time that was so unripe.

Between the time that Neufeld established the antigenic value of pneumococci, and the time that Dochez and Gillespie, and Lister established the varieties and specificity of the groups of pneumococci (namely, in 1911 and 1912), Wright and his co-workers[11] vaccinated a large number of native South Africans.

In the preparation of their saline vaccine they necessarily did not take into consideration the predominant types against which this measure was aimed. Further, in those cases of pneumonia that developed after vaccination, no cognizance could be taken of the groups to which the etiologic organisms belonged. Their results were evaluated by estimation of opsonic indexes—a method that has fallen into much popular disfavor, and by statistics, employing groups of "controls" for comparison, a method that brought about much argument concerning the method of selection.

In a historical study of pneumococcal vaccination, Wright's work must, of course, be considered; in a critical study of the subject it would be better to consider his work only in passing, lest the inopportune time at which it was undertaken and the paucity of our knowledge at that time befog any conclusions that might be drawn.

Lister's work, however, was built on an entirely different foundation. He was well armed with the knowledge of the types that predominated in his field of endeavor, and could take the selection of those strains into consideration in constructing his vaccine. The many technical difficulties of producing large numbers of pneumococci in a concentrated form were somewhat reduced by his apt adaptation of a cream separator for centrifugalizing broth cultures. Above all, his knowledge of the types of pneumococci permitted him to evaluate correctly the significance of those cases of pneumonia that did follow his inoculations.

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[7] Dochez, A. R., and Gillespie, L. J.: A Biologic Classification of Pneumococci by Means of Immunity Reactions, The Journal A. M. A., Sept. 6, 1913, p. 727.

[8] Lister, F. S.: Pub. 2, South African Inst. for Med. Research, 1913.

[9] Friedlander, Alfred; McCord, C. P.; Sladen, F. J., and Wheeler, G. W.: The Epidemic of Influenza at Camp Sherman, Ohio, The Journal A. M. A., Nov. 16, 1918, p. 1652.

[10] Olmstead, M.: Jour. Immunol., 1917, **2**, 425.

[11] Wright, A. E., et al.: Lancet, London, 1914, **1**, 1, 87.

Forearmed in such a fashion, he was enabled to construct a vaccine, limited to those types most potent in the production of lobar pneumonia on the Rand, namely, Groups A, B and C. He determined by extended animal experimentation that these vaccines intravenously, and subsequently subcutaneously, gave rise to demonstrable antibodies. A limited number of intravenous inoculations in human beings was next tried, but the apparent impracticability of such a method caused it to be discarded, though antibody production was good. A limited number of subcutaneous vaccinations in man then assured him that this method was not only productive of results, but quite applicable to large groups of native laborers. Pneumococcus vaccines are noticeably less toxic than many others we are more familiar with, and, coupled with the fact that the South African native is slightly disturbed by bodily discomfort, Lister was able to inoculate a large number of these natives subcutaneously, each with three doses of a saline vaccine, of high bacterial content, at seven day intervals, without undue disturbance.

He was able to keep a large proportion of these subjects under observation for a period of nine months or longer, and his results are startling. It would be presumptuous to try to sum up such a monumental work in a few words. To those interested in this subject Lister's most recent publication[12] is earnestly commended.

His Crown Mine experiment is of particular interest. During a nine months' period, approximately 11,000 natives were inoculated with a vaccine that included Groups A, B and C. During that time, in these 11,000 vaccinated natives, eighty-two cases of lobar pneumonia resulted, but not a single case was caused by a pneumococcus of either Group A, B or C. Had the prevalence of Groups A, B and C remained constant with the other types, lobar pneumonia cases due to Groups A, B and C to the number of 120 would have developed.

There seems to be no doubt, then, judging from Lister's work, that, if the prevalent types of pneumococci be considered in the elaboration of a vaccine, sufficiently rich to be effective, that vaccine should be almost 100 per cent. efficient *for the specific types.* (Lister rather inclines to large doses and considers a total of 6,000 million cocci of each group against which protection is sought as the minimum.) Three inoculations at intervals of seven days are necessary, and the local and systemic reactions following the vaccinations are far outweighed by the beneficial results.

As a matter of fact, these published results are so good that one is apt to recall the proverb, "Timeo Danaos et dona ferentes."

WORK OF CECIL AND AUSTIN

Their true worth is practically vouched for, and the results amply confirmed by the recent work of Cecil and Austin.[13] They prepared a saline pneumococcal vaccine of Types I, II and III, much after the fashion of Lister. This vaccine, under the direction of Colonel Russell, was used at Camp Upton, to vaccinate 12,519 men. Animal experiments and limited ones in human beings had served to demonstrate that this vaccine had antigenic effect, measurable by agglutinins, and the protection the serum of vaccinated individuals conferred on mice. The vaccination of troops began Feb. 4, 1918, and these troops passed from observation about April 15, 1918, making the period of study about ten weeks. The three inoculations were given at seven day intervals, except in those cases that showed a marked reaction after the first or second dose, in which cases it was discontinued. For the sake of simplicity, their results might be tabulated as in Table 1. Any more critical analysis of these figures or cases serves only to accentuate the apparent efficacy of the vaccine.

It will be noticed that a Type I, II and III vaccine seemed to prevent practically all cases of pneumonia due to those types, and caused an apparent protection, not only against Type IV, which might have been suggestive of cross protection, but also against *Streptococcus hemolyticus* and *S. viridans.* The authors offer no explanation of this fact. It is possible that so much foreign protein injected into the human being has caused him to mobilize his ferments and leukocytes, as demonstrated by Jobling and Petersen,[14] to the increase of a natural resistance. It is further possible that this change in ferment-antiferment balance has conferred on the individual, besides the specific immunity, an additional resistance against a large number of other bacterial invaders.

TABLE 1.—INCIDENCE OF PNEUMONIA AMONG VACCINATED AND UNVACCINATED TROOPS: RESULTS OF CECIL AND AUSTIN *

Pneumonia Cases of Types	Vaccinated, 40%	Unvaccinated, 60%
Type I	1†	10
Type II	0	9
Type III	0	7
Type IV	0‡	33
[illegible]	6	72
[illegible]	1	34
[illegible]	0	7
Total	17	172

* Average strength of command, 3,200.
† Developed twenty-four hours after first injection.
‡ In three cases only one injection was given.

There is little room, therefore, to doubt that saline pneumococcal vaccination is highly efficient for the specific types contained in the vaccine. Within that limitation, it bids fair to rival typhoid vaccination, about which there has for some time been no doubt.

SALINE VACCINE AND LIPOVACCINE

The saline pneumococcus vaccine has the advantage of being an efficient prophylactic. It has, however, certain distinct disadvantages. Production of such a vaccine on a large scale has always been a difficult, trying and somewhat expensive procedure. The time limit on such a vaccine, owing to comparatively rapid autolysis, must be short, and this would serve to increase its price, an important consideration when widespread measures are contemplated. It must be given, so that a sufficiently large dose to be effective is administered, in at least three, preferably more doses, at seven day intervals. The difficulties that this offers to the general use of a prophylactic measure are most obvious to one who has worked in the public health field, though the rural practitioner, advocating the saline typhoid vaccine, has had ample opportunity to feel this disadvantage.

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[12] Lister, F. S.: Publications VIII and X, South African Inst. for Medical Research, 1916 and 1917.

[13] Cecil and Austin: Jour. Exper. Med., 1918, **28**, 19.

[14] Jobling, J. W., and Petersen, William: The Nonspecific Factors in the Treatment of Disease, THE JOURNAL A. M. A., June 3, 1916, p. 1753.

While pneumococcal vaccines in general are not so toxic as typhoid vaccines, the fact that quite frequently a saline injection is followed by a sharp reaction militates strongly against its general use.

Almost all of the foregoing disadvantages are overcome by the use of a pneumococcus lipovaccine. A lipovaccine is one in which the bacteria are suspended, not in saline solution, but in an oil or lipoid vehicle. By this means autolysis is greatly prevented, absorption is slow, and massive doses can be given at one injection, thereby reducing the number of inoculations to one. Not only does the oil retard absorption, but there is good cause to believe that the lipoid substances serve directly to reduce the toxicity. Such a vaccine was first elaborated by Le Moignic and Pinoy[15] for triple typhoid vaccine, and has been adapted by the Army Medical School[16] to a wide variety of vaccines.

As early as December, 1917, a pneumococcus lipovaccine had been elaborated at the Army Medical School.[17] Colonel "W" received the first dose, and, along with Capt. "C," the other subject, responded by the production of agglutinins. The reactions to the vaccine were so mild that Colonel "W" repeated the vaccination on the two succeeding days, the third dose being followed by a slight chill. In each of these doses he received the total of three saline doses.

The work on the pneumococcus lipovaccine was somewhat delayed, owing to the fact that a triple lipovaccine had to be perfected, one that subsequently came into use in the Army to the exclusion of the saline vaccine.

Animal experiments with the pneumococcus lipovaccine of Types I and II seemed to show some protection as a result. A direct systematic comparison was then made between two types of saline vaccines, one of the latter being the one in use, at that time, at Camp Upton, which was to show, at a later date, such excellent results.

In these tests, one of the lipovaccines, which could be given in one dose and which caused only a slight reaction, was found to be so far superior to the other three types that it was made on a slightly larger scale and altered by the addition of Type III and used, to the extent of about 25,000 doses, in the military camps. This was a vaccine of high bacterial content, but the reactions following were very mild. The reports, following its use, and the coincidental pandemic, with the attendant pneumonias, confirmed the wisdom of adopting this vaccine as a general but voluntary measure in the Army, a step that had been taken some time previously.

It is to be emphasized that this was not a vaccine, developed over night, as a prophylactic against influenza; it was a vaccine aimed at pneumococcal infections, developed systematically at a time considerably antedating the present pandemic.

This lipovaccine seems to overcome all the difficulties associated with a saline vaccine except the expense and ease of production. It is somewhat more laborious to produce such a vaccine, and the use of oil and the mechanical equipment necessary make it more expensive.

UNITED STATES ARMY VACCINE

The particular type of vaccine in use in the U. S. Army is made as follows:

The three types of pneumococci are grown separately in a beef infusion broth, incubated not more than eighteen hours, and the organisms recovered by the use of a continuous feed type of centrifuge, a perfection of the type used by Lister. On this centrifuge, spinning at a rate of 40,000 revolutions a minute, depends the effective removal of the pneumococci. The organisms are thus secured in the form of a heavy mass of about the consistency of library paste. This mass, under glass hoods and under aseptic conditions, is then smeared in thin layers over the bottoms of Petri dishes, which are next covered with an earthenware top. In these Petri dishes the bacterial material is then brought to complete desiccation in a 53 C. incubator, liberally supplied with unslaked lime. The average water loss is about 80 per cent. This drying process is a matter of only a few hours, and little morphologic change in the organisms takes place, since they may again readily be suspended in saline and present themselves as gram-positive cocci of sharp, clear staining characteristics.

This material, now dry, readily flakes off from the glass, and is pooled, again under the hood, into one container. It is then measured out by weight to establish the dosage. The decided advantage of the use of weighed quantities of dry bacterial material to determine the dosage is, after a moment's thought, quite apparent. Many of the fallacies attending dose determinations in saline vaccines are obviated by the use of weights. It has been found that a unit of dry bacterial mass represents a fluctuating number of bacteria, depending on the virulence of the organisms, cultural environment and time of incubation.

The Army vaccine contains dry material equal, in round numbers, to 10,000 million of each type. Those figures are, of course, only relative, and it must be insisted on that dosage by weight is constant, while dosage by count is notoriously fluctuating and inaccurate.

After the dry material has been carefully weighed under sterile conditions, and calculated so that each cubic centimeter of the finished vaccine will contain 0.83 mg. of each type, the bacterial flakes are placed in a sterile grinding jar, along with sterile steel ball bearings, the jar is placed on a mill, and during the course of twenty-four hours the bacterial mass is ground to a fine, amorphous powder. At the end of that time a mixture of anhydrous lanolin and cottonseed oil, in a proportion of 1:2, is added, so that the completed vaccine shall contain 2 per cent. of lanolin. The mass is then thoroughly emulsified by grinding twelve hours, at the end of which time cottonseed oil is added to make the final dilution, along with 0.5 per cent. chlorbutanol as a preservative. The grinding is then continued twelve hours. The oil and the lanolin-oil mixture has been sterilized by autoclaving at 15 pounds for thirty minutes.

This completed vaccine is then subjected to rigorous cultural tests, and is finally injected into animals, to insure sterility. It is then ampuled and distributed for use. Its administration is a simple matter if a needle of 23 gage or any larger bore is used. While sedimentation does occur, cottonseed oil is only so slightly viscid that an even suspension is easily attained by slight shaking.

Several commercial firms are now actively producing, or preparing to produce, a vaccine modeled on the foregoing plan. Supervisional tests, by the government, of sterility will be a relatively simple matter; tests to evaluate the antigenic efficiency of the vaccine will be attended by greater difficulties. These, however, no doubt will be met.

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[15] Le Moignic and Pinoy: Compt. rend. Soc. de biol., 1916, **79**, 201, 352.

[16] Whitmore, E. R.; Fennel, E. A., and Petersen, W. F.: An Experimental Investigation of Lipovaccines, The Journal A. M. A., Feb. 16, 1918, p. 427.

[17] Whitmore, Fennel and Petersen: Abstracts of Bacteriol., 1918, **2**, 16.

It might be interesting to mention that the Army Medical School has manufactured and sent out for use during October and November, 1918, more than two million doses of this vaccine. The magnitude of this undertaking is better understood when one recalls that Lister, the master himself, said that the manufacure of 40,000 doses for the British government on short notice was out of the question.

RESULTS OF VACCINATION

Much had been hoped for when the tabulated results of this widespread vaccination would have been available. The abrupt cessation of the war, and the rapid demobilization that must follow, will withdraw from observation this large number of vaccinated men. Much valuable information, however, should come to light in the due course of time. Laboratory methods that have stood the test of time were used to test the value of the vaccine, and the results have been found particularly gratifying.

Such a vaccine as is issued by the Army has been injected into human beings, and tests have been made. Ten weeks after injection, 0.2 c.c. of the serum of these subjects almost regularly protects a mouse against 1,000 times a dose of living pneumococci that would otherwise be fatal.

Preliminary clinical reports seem to be highly satisfactory. Some of the unexpected results, such as made their appearance at Camp Upton, seem to be following the use of the lipovaccine. While a specific immunity against the three types of pneumococci in the vaccine was all that was hoped for, a certain freedom from respiratory diseases in general seems to have followed its use. Absence of bronchial symptoms in influenza, after vaccination, was noticeable. While the information at hand is fragmentary, and not to be seriously considered, it may be a straw to show the direction of the wind. For example, fourteen women war workers living in one house were exposed to about the same conditions. Twelve were vaccinated at the beginning of the pandemic in Washington, and remained well and on duty throughout that pandemic. The two unvaccinated ones both contracted influenza. Of a number of men on duty in a Washington fire department, two refused the vaccine; these two alone of that company contracted influenza. Such apparent nonspecific protection seems somewhat visionary until one recalls the fact that even normal brain substance increases resistance against rabies, a disease of specific origin. Vaughan[18] noted this resistance following the injection of his protein split products, Zinsser and Dwyer[19] have discussed it, Joblin and Petersen[20] observed it after serotoxin injections, and Teague and McWilliams[21] noted it after typhoid vaccine shock.

The studies of Jobling and Petersen[20] and of Scully,[22] Culver[23] and Petersen[24] endeavor to explain the modus operandi of this increased resistance.

Studies have been made at the Army Medical School to note the relationship between triple vaccination and streptococcus infection. Medlar[25] shows that triple typhoid vaccination does not predispose to streptococcus infection and might seem to increase the resistance. Smith's[26] study of cytologic changes after the same vaccination might explain some of the nonspecific protection noted.

It is true that to demonstrate increased protection after the injection of foreign proteins it is customary to use large doses intravenously; it is possible that such small doses as 25 mg. (the total content of the Army vaccine) might serve to establish a relative immunity.

In connection with the nonspecific value of a vaccine, and in relation to the particular vaccine issued by the Army, Table 2 might be of interest. Mice, vaccinated with a saline and a lipopneumococcus vaccine, along with control mice, were subsequently injected with low virulence *Streptococcus hemolyticus* cultures. It would seem that the lipovaccines render the mouse more susceptible to large doses of streptococci, but render it more resistant to smaller doses. Since the latter case more closely simulates the natural mode of infection, the experiment, limited though the series is, may help to explain some of the so-called "cross protection" results. The more gradual absorption of the lipovaccine might account for the difference between it and the saline vaccine.

TABLE 2.—RESULTS IN A SERIES OF MICE INOCULATED WITH PNEUMOCOCCUS VACCINE, TESTED TO DETERMINE THEIR RESISTANCE TO HEMOLYTIC STREPTOCOCCUS TWO MONTHS AFTER VACCINATION; SEPT. 15, 1918

Series No.	Date of Vaccine Inoculation	Vaccine	Amount, C.c.	24 Hour Broth culture*	No. of Inoculations	D.	A.	D.	A.	D.	A.	Per Cent. Dead	Per Cent. Alive
1 13 mice	7/16/18	Saline pneumo.	⅛	1/25	5	3	2	4	1	5	0	100	0
	7/24/18		¼	1/50	4	1	3	3	1	3	1	75	25
	8/ 1/18		¼	1/100	4	0	4	1	3	1	3	25	75
2 12 mice	7/16/18	Lipo-pneumo., *unheated*	¼	1/25	4	4	0	4	0	4	0	100	0
				1/50	4	2	2	3	1	3	1	75	25
				1/100	4	0	4	0	4	0	4	0	100
3 7 mice	7/16/18	Lipo-pneumo., heated 53 C. (Army)	¼	1/25	2	1	1	1	1	1	1	50	50
				1/50	3	1	2	2	1	2	1	66	33
				1/100	2	0	2	0	2	0	2	0	100
Control 4 26 mice	...... —	...... —	— —	— 1/50	— 6	— 2	— 4	— 3	— 3	— 3	— 3	— 50	— 50
				1/100	20	1	19	3	17	4	16	20	80

* Twenty-four hour culture, low virulence Streptococcus hemolyticus.

"MUSHROOM" VACCINES VERSUS PNEUMOCOCCUS LIPOVACCINE

Consideration of the many "mushroom" vaccines that sprang up over night during the pandemic, and which, besides a multiplicity of other organisms, were made to contain a questionable number of pneumococci, is purposely omitted. That they may have served some purpose in a specific immunity is possible, but hardly probable. In these justly called "shotgun vaccines" the content of the individual groups must necessarily have been so small as to be

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18. Vaughan, V. C.: Protein Split Products, Philadelphia, Lea and Febiger, 1913.
19. Zinsser, H., and Dwyer, J. A.: Jour. Exper. Med., 1914, **20**, 387.
20. Jobling and Petersen: Jour. Exper. Med., 1914, **19**, 480.
21. Teague and McWilliams: Jour. Immunol., 1917, **2**, 167.
22. Scully, F. J.: The Reaction After Intravenous Injections of Foreign Protein, THE JOURNAL A. M. A., July 7, 1917, p. 20.
23. Culver, H.: Jour. Lab. and Clin. Med., 1917, **3**, 11.
24. Petersen, W. H.: Serum Changes Following Protein "Shock" Therapy, Arch. Int. Med., November, 1917, p. 716.
25. Medlar, E. M.: Personal communication to the author.
26. Smith, J. W., Jr.: Personal communication to the author.

unable to lift the patient over the threshold of appreciable immunity.

That the vaccines may have had some nonspecific value, comparable with that of the vaccine used at Camp Upton, cannot be denied. However, the burden of the proof rests with the originators of these vaccines, and their value should be weighed on the merits of the vaccines alone. Such a judicial decision is, at this time, of prime importance. We have not passed through the pandemic of influenza with its sequelae; we are passing through it. If the history of the last great pandemic[27] is to be of any value, it should teach us to be on the alert for the recrudescences that must occur throughout this year, as well as in the following three or four years.

It is a better policy to use one instrument, if one is thoroughly familiar with it, limited though its uses may be, than to use a wide variety of unfamiliar, complicated ones.

We feel that pneumococcus lipovaccine is such an instrument. We feel that we have definite assurance that it will prevent infection by Types I, II and III. Epidemiologic studies of localized epidemics, that would justify the addition of purely local types to the vaccine, are to be encouraged. The lipovaccine is such that much additional pneumococcus material may be added, without increasing its toxicity.

The advantages of such a vaccine—its lack of toxicity, its simplicity of administration, and the high degree of immunity conferred—should, during the remainder of this winter, and during the next several years, when we shall most probably be called on to combat recrudescences of the pandemic, with its attendant pneumonia, be a useful weapon. Not only should it have its place in the Army, but also it should be seriously considered by those physicians in charge of industrial ventures, such as mines, steel mills, ship yards and the like. Such a vaccine must come from a source that is unquestionable and one that is capable of massive production. Such a demand from civilian sources might be satisfied by the Army, if the necessary arrangements could be made, until the supply would be forthcoming from normal channels.

CONCLUSIONS

1. Prophylactic pneumococcus vaccination is successful over an extended period of time for those groups represented in the vaccine.
2. A pneumococcus lipovaccine, of slight toxicity, to be given at one injection, has been elaborated, and has had widespread use. Early reports indicate its usefulness.

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[27] Epidemic Influenza, Therapeutics, The Journal A. M. A., Oct. 5, 1918, p. 1136.

Maternal Nursing and the Sculptor's Model.—Rickets, a disease of nutrition, still too common with us, is but rarely seen in Italy, where it is the universal custom for mothers to suckle their infants, and whence accordingly come those shapely human forms that are chosen by our sculptors and artists for their models. Mothers unquestionably suffer in health and happiness from the suppression of a function which should form a pleasurable and wholesome episode in their existence, and it has been suggested that the prematurely aged and withered appearance of the married women in the manufacturing districts is in some degree attributable to the check imposed on the lacteal process in them by their employment, when that process has been once fully established.—Sir James Crichton-Browne, *Journal of State Medicine*, May, 1918.

AN EXPERIMENTAL STUDY OF THE SURGERY OF LARGE ARTERIES: ANEURYSM

THE PLACING OF MUSCULOFASCIAL INSERTS WITHIN AND THEIR USE IN PATCHING ARTERIES

FREDERICK C. HERRICK, M.D. (Cleveland)
Major, M. R. C., U. S. Army
CAMP CRANE, ALLENTOWN, PA.

It is well known that exposure of blood to extravascular tissue favors clotting. This fact is often used, especially in surgery of the brain, for the control of small bleeding points. However, the ability of normally circulating blood within the arteries to withstand the coagulum-producing influence of foreign tissue has not, to my knowledge, been given special study.

The object of this research was, therefore, to investigate the occurrence of clotting about an intravascularly placed piece of foreign tissue (muscle and fascia). The first conception was that such a condition would rapidly produce clotting, and if the tissue placed within the vessel were of appreciable size, thrombosis would likely occur.

The results of this research, however, have not upheld this first conception, and it has been found that relatively large musculofascial inserts may be placed within arteries (as the aorta of a dog) without producing serious obstruction to the blood current.

The breadth of application of this fact to the surgery of aneurysm or the repair of large blood vessels is evident:

1. The wiring of large aneurysms is inaccurate, and even when, by chance and experience, the wire coils properly, the results have been encouraging in only a few cases. Both the wiring operation and Halsted's rings placed proximally to the aneurysm are foreign bodies in the tissues, and comprise the disadvantages of such measures. The use of musculofascial inserts at the opening of aneurysmal sacs for closing the openings, or so placed as to limit the size of a sac or fusiform aneurysm, is a possibility and led to this research. Furthermore, instead of measures such as Halsted's rings about a large vessel proximal to the aneurysm, it was found that tissue inserts may be used to control the volume of blood passing through the vessel and hence to the aneurysm. The great variety of aneurysms was well appreciated, and the fact was well apparent that much work would be necessary for the application of the method to the different forms of sacs.
2. In the repair of injured vessels, direct intimal apposition has been thought necessary. In the light of this research a patch of fascia, muscle or both may be placed over an injured artery, covering a defect without producing thrombosis of the vessel.
3. In the replacement of segments of vessels, pieces of other vessels have always been used. In dogs, by maintaining a certain part of the circumference of a vessel the balance may be built up with fascia and functionates perfectly, and thus an intimal lining is formed. Its source is open to question and is a problem for further research.
4. In some cases a definite plug of muscle and fascia may be placed against a circumscribed opening in an artery.

The subjoined experimental protocols form a preliminary report:

PROTOCOLS OF EXPERIMENTS

The first series was begun, Nov. 10, 1917, at the Cleveland City Hospital.

Experiment 1.—A small fox terrier was anesthetized with ether, a midline abdominal incision was made, the intestine was pushed to the right, and the aorta exposed. A No. 2 chromic ligature was passed around it in two places, 1 inch apart between the origin of the renal arteries and the bifurcation, and its pulsations were controlled by traction. A fine dulox skin needle, with silk attached, was passed through the aorta, including the anterior third as a sector. Under traction on this suture, a fine pointed knife was entered beside it, making a slit 1 mm. long in the aorta. A strip of external oblique fascia attached to the thread was drawn through the aorta by means of these two openings. After the passage of the fascia, although the slits had been made, there was absolutely no bleeding. The fascia projected 0.5 cm. on each side. The abdomen was closed in three layers. The dog recovered rapidly from the anesthesia. There was a well marked femoral pulse of 200.

Necropsy.—Jan. 15, 1918, sixty-five days after operation, the dog was killed. When the aorta was slit open through the point of operation, there was no clot present. A piece of intima-colored tissue projected into the lumen 3 by 3 mm. thick.

Experiment 2.—A medium sized mongrel was anesthetized with ether, the aorta was exposed, and a piece of fascia and muscle 3 mm. wide was passed through it. A single suture was placed on each side of the vessel wall at the proximal end of the opening to control hemorrhage around the transplant. Closure was made in three layers. The femoral pulse after operation was 160.

Necropsy.—Feb. 10, 1918, sixty days after operation, when the aorta was slit open through the site of the insert, the same condition was found as in Experiment 1.

Experiment 3.—A medium sized mongrel was anesthetized with ether and the aorta exposed. The pulse was controlled by traction sutures. A fine bladed knife was passed through the aorta and a piece of tissue composed of external oblique fascia, muscle and peritoneum was passed through the aorta. The piece was three-fourths the size of the aorta. However, when passed through on tension it was probably not more than half the size of the aorta. Its ends were held together in front of the aorta by one stitch. It was noticed that very slight traction on this tissue in any direction except transversely readily produced hemorrhage around it, but immediately on ceasing to pull and allowing the tissue to contract, the hole in the aorta was plugged and bleeding stopped. Closure was made.

Necropsy.—Feb. 12, 1918, forty days after the operation, the condition was found to be the same as in the two preceding experiments. The amount of tissue present within the lumen was equal to one-fourth the lumen. No clot was present.

The foregoing series was interrupted by my receiving orders for military service. An opportunity did not present itself for continuance of the work until a change of station took me to Fort Des Moines Base Hospital as chief of the surgical service. During my six weeks at this post, the following experiments were completed:

Experiment 4.—July 30, 1918, a small fox terrier was anesthetized with ether, the aorta was exposed, and a piece of fascia and muscle two-thirds the size of the aorta was passed through it. Three stitches were necessary on the left side proximally to the insert, distally and at a midpoint. A good pulse was present with a thrill over and distal to the insert. July 31, a good femoral pulse was present. The dog was sick. August 1, it died.

Necropsy.—Two days after operation the cause of death was found to be general peritonitis, through some fault in technic. The aorta was slit open over the insert. A clot was present which might be called an icicle clot, since it suggested such a formation. Its base started from and surrounded the insert, from which it tapered slightly to its blunt tip 6 mm. distally. Extending proximally was the same formation 7 mm. long. A pair of lumbar arteries 1 mm. in diameter opposite the clot was not thrombosed.

Experiment 5.—July 27, 1918, a large brindled bull was anesthetized with ether, the aorta was exposed, and a piece of muscle and fascia two-thirds the size of the aorta passed through its center. Bleeding occurred from the corners of the incision, but was entirely controlled by four stitches. A good aortic pulse with a thrill was present distal to the insert. July 28, the dog was in good condition; there was no weakness of the legs, and a good femoral pulse was present. July 31, a good femoral pulse was present. Under ether anesthesia the abdomen was opened and a good aortic pulse distal to and over the insert was verified.

This observation was made because it was thought possible that the femoral pulse might result from a collateral circulation more easily established in dogs than in man. The pulse, however, was present over and immediately distal to the insert. There was no collateral circulation present. In later experiments, when a thrombosis was intentionally caused, the dogs showed weakness of the hind legs for a variable time after operation.

Necropsy.—Four days after operation, the aorta was slit open through the site of the insert. An icicle-shaped clot was found extending 9 mm. from the insert distally. There was some irregular clot proximal to the insert, attached to it. A pair of small lumbar vessels branching opposite the middle of the distal clot was thrombosed.

Experiment 6.—Aug. 6, 1918, a large white mongrel was anesthetized with ether, the right carotid was exposed, and two pieces of tissue taken from the neck were passed through it transversely 2 cm. apart. The proximal insert consisted of muscle and cervical fascia 2 mm. in thickness. The distal insert consisted of cervical fascia with some fat attached, 2 mm. in diameter.

August 11, five days after the operation, the carotid was exposed under ether anesthesia; a full pulse was present over and distal to the inserts. The carotid was excised and slit open. The inserts were both present, 2 mm. wide, projecting into the lumen, reducing it by approximately one half. No clot was present.

Experiment 7.—Aug. 5, 1918, a female (the same animal as in Experiment 8) was anesthetized with ether, the aorta was exposed, and a piece of muscle fascia was passed through a slit 4 mm. long. No sutures were necessary. A good pulse was present below the insert with a marked thrill. From August 6 to 10 the animal was in good condition with a good femoral pulse.

August 11, six days after the operation, under ether the abdomen was opened, and a good pulse over and distal to the insert was verified. When the aorta was slit open, no clot was found. The large insert was present, of the same color as the intima. When it was placed through the aorta at operation, the sides of the vessel had apparently been drawn together and held there, so that only a small segment of insert presented itself to the blood stream, and the lumen of the vessel had been reduced by one third. Thus it is possible to reduce the caliber of an artery markedly by this method. If done proximally to an aneurysm it would greatly diminish the volume of blood passing into the sac as well as the speed of its passage through the sac. This would appear to be a good method for bringing about such a condition of circulation. Whether such a procedure is preferable to the direct attack on an aneurysm by transplants should be later worked out, for the same technic might be used in reducing the size of the sac or its opening. And here seems to be one of the lessons learned by this study: By passing musculofascial transplants, transversely, obliquely and longitudinally, one or all, through an aneurysmal sac, the latter's capacity can be lessened. This, together with the clot-producing power of such tissue when exposed to blood under other conditions favoring clotting, can be used to thrombose entirely an aneurysmal sac. From observations in some of these experiments it seems possible so to place these inserts in a sac that a proper current would be left for vessels branching from it.

Experiment 8.—Aug. 2, 1918, a small terrier was anesthetized with ether, the aorta was exposed, and a strip of rectus muscle and fascia one-fourth the size of the aorta was passed through the midpoint transversely. No stitches were necessary. A good pulse with a thrill was present over and below the insert. Closure was done. August 3 to 10 there was a good femoral pulse.

August 11, nine days after operation, under ether, the abdomen was opened and a good pulse over and distal to the insert was verified. When the aorta was slit open, no clot was found. The insert measured 6 by 2 by 2 mm., and was the same color and appearance as the intima. It reduced the lumen of the aorta by fully two-thirds its volume.

Experiment 9.—July 17, 1918, a large female mongrel was anesthetized with ether, the aorta was exposed, a slit 0.5 cm. long was made longitudinally through both walls, and a piece of external rectus sheath and muscle equal to the diameter of the aorta was passed through. There was no bleeding around the insert. There was a pulse, distal to the insert, with a thrill. Closure was done. There was a good femoral pulse. July 18, the dog was active; a full femoral pulse was present. The condition continued the same till July 31 (fourteen days after operation). Under ether anesthesia the abdomen was opened. A good pulse was felt in the aorta immediately distal to the insert and at the site of the insert, where the vessel was felt thickened and a moderate mass of adhesions was present.

Necropsy.—The aorta was slit longitudinally through the insert, and the insert was accidentally cut. The insert was 6 mm. in diameter, the aorta, 1 cm. in diameter. No clot whatever was present.

Experiment 10.—July 16, 1918, a small fox terrier was anesthetized with ether, the aorta was exposed, the circulation was controlled as above, a slit 1 cm. long was made through both walls laterally, and a piece of anterior rectus muscle and fascia equal to the size of the aorta was passed through the aorta. Four stitches at the ends of the slits were necessary to control the bleeding. A faint pulse was felt distal to the insert. Closure was made. A very faint femoral pulse was present. From July 16 to July 24, no femoral pulse could be felt. July 25, a faint femoral pulse reappeared. July 25 to August 8, the femoral pulse increased to normal volume. August 8, the animal strangled herself on her tie rope; she had been very well and active.

Necropsy.—Twenty-three days after operation, a section of the aorta, including the iliacs, was excised. The aorta was slit open; no clot was present. The insert was found; it measured 3 by 3 mm.; it was firm, was closely adherent to the anterior wall of the aorta and had a gray, glistening appearance indistinguishable from the intima. It reduced the aortic lumen by two thirds.

Experiment 11.—July 7, 1918, the same animal as in experiment 4 was anesthetized with ether, the right carotid was exposed, and with a fine knife the anterior half of the vessel wall was excised for 1.5 cm. A piece of external rectus muscle and fascia 3 mm. thick was removed and sutured as a patch over the carotid defect with the muscle surface projecting into the lumen.

July 28, the wound was clean. August 11, twenty-four days after operation, under ether anesthesia, the carotid was reexposed and found to have a full pulse throughout its extent. A small sacculated aneurysm was present, with an opening 4 by 4 mm., a depth of 2 mm., and its cavity 5 mm. at the widest point, occupying the position of the musculofascial patch. The carotid was removed and slit open. There was no clot whatever present. The patch had held firmly but had bulged out to a depth of 2 mm. It contained no clot. The inference from this case is that such a patch, if applied in man, would give rise to an aneurysm. The fate of transplanted tissue is well known, and the resulting scar tissue in this case must be very firm and strong in order to withstand arterial pressure. It looks as though intra-arterial or intra-aneurysmal transplants would be of greater value in the treatment of aneurysm.

A complete report on the foregoing work, with photographs of the specimens and histologic examinations of the tissues will be made later. The exigencies of active military service render such studies difficult. The following conclusions seem fair, and I regret that lack of time will not permit a discussion of the many points of value that have been observed.

SUMMARY AND CONCLUSIONS

1. Strips of rectus fascia with muscle attached of varying size up to three-fourths that of the aorta of dogs may be placed through a dog's aorta or carotid without causing permanent clot or thrombosis. In certain cases no clot at all is formed.

2. In over half the experiments, the contraction of the aortic walls about the inserts and of the inserts against the slits in the aorta entirely controlled hemorrhage. In the remaining cases, from one to four simple sutures controlled bleeding from the corners.

3. These inserts diminished the lumens of the aortas to approximately one-third to three-fourths their former volume.

4. Such inserts may be used to diminish the volume of a large artery, to diminish the orifice of a sacculated aneurysm, to favor thrombosis of the aneurysmal sac by being placed through it, or to limit the size of a fusiform aneurysm by being placed so as to exclude certain sectors from the current.

5. In no cases have symptoms of embolism been noted. The only pathologic observations to exclude such an occurrence were: (a) In two cases examined at necropsy within six days, no clot was formed at all. (b) In four cases examined at necropsy later than six days, no clot was present. (c) In all cases but one, when a clot was formed it took a uniform, blunt tipped icicle shape, was quite firm, and would not easily break off.

6. A patch of fascia or muscle may be sutured to an arterial defect with perfect functional results.

7. The sac of an aneurysm or the vessel proximal to it may be lessened in volume by such inserts.

8. An arterial patch of muscle and fascia in a dog is consistent with perfect function of the artery.

CHRONIC ARSENIC POISONING ON A FARM

REPORT OF A CASE

SAMUEL AYRES, Jr., A.B.
BOSTON

History.—A woman, aged 22, seen by Dr. Samuel Ayres of Kansas City, Mo., to whom she was referred by her local physician in Summers, Ark., complained of sore mouth, indigestion, weakness and general tenderness. She had been married two and one-half years; she had had no children nor miscarriages. She had had mumps, measles, whooping cough and scarlet fever during childhood; there had been no operations. Previous to her present illness she had been entirely well. She had had a well-balanced diet. She lived on a farm and had no other occupation aside from her household duties. Prior to five years before she had been employed in a fruit drying factory for three years, where she said that she was exposed to sulphur vapor. She also spent a great deal of time spraying fruit orchards, and said that she ate fruit which had recently been sprayed. The spray, she thought, contained arsenic. This immediately preceded her present illness, which began five years before. On questioning, she was quite sure that she had *not* been exposed to arsenic during the past five years. She had moved away from the fruit orchard. There was no family history of tuberculosis. A year and a half before, the patient's brother, who was then 22 years old, was operated on for appendicitis, following several intermittent attacks of severe abdominal cramps. The operation gave no relief, and the attacks of cramps had persisted up to the present time. The brother had a papular skin eruption on his face and back. A sister also had had trouble with her skin for some months.

Present Illness.—Skin: Five years before, in May, a papular eruption appeared on the forehead and chin, which spread to the body, chest, back and shoulders, scalp and face. This was diagnosed by a local physician as eczema, and treated by local applications which, instead of giving relief, only made matters worse. The eruption consisted of papules and pustules which bled when opened. Some were as large as the little finger nail, and often ruptured spontaneously, bleeding profusely and soiling the clothing. The condition of the skin had been variable, sometimes better, sometimes worse. For the past year or more there had been a more permanent brownish pigmentation of the face. Heat or wind caused the face to burn and sting.

Sensation: About a year later, or four years before being seen, a burning sensation of the mouth, tongue and lips was noticed. The patient said that her tongue was red, and that the lips were blistered and peeled. The burning sensation later spread to the chest and epigastrium, and at times a sense of burning and tenderness was general over the entire body so that merely touching her caused pain. The patient said that sometimes her hands felt as if they were three times their normal size. They often felt numb, or tingling, and she had frequently cut or burned herself without feeling any pain. About two years before, her eyes began to cause trouble. After looking at objects for even a short time, her eyes would become tired and the vision blurred. At times the patient had lost her sense of smell and taste. For the past three weeks water had tasted bitter.

Digestive Tract: The appetite had been variable; there was no vomiting; the patient was not often nauseated. During the past two years there had been discomfort after eating. From fifteen to thirty minutes after a meal, a heavy feeling was noticed in the stomach, which frequently caused the heart to beat rapidly. Often there was a bitter taste in the mouth soon after eating. Because of these symptoms, and on account of the sore mouth, the patient had eaten but little. For periods of a week or two at a time, the patient had been troubled with an excessive flow of saliva. The bowels were constipated, moving once in two or three days. There had never been any diarrhea. The rectum was sore and burned.

Cardiovascular: At times the heart beat so rapidly that it was quite uncomfortable. This was brought on usually by eating or by overexertion. There was no dyspnea.

General Condition: The patient felt weak. She had lost both strength and weight. Her best weight three years before was 123 pounds; the present weight, three weeks before, 99½ pounds.

Genito-Urinary: Menstruation had been irregular during the past three years, with considerably more pain. Often there had been intervals of from six to eight weeks between periods; one interval lasted five months. The last period was three weeks before. Sometimes there was burning after urination and burning in the vagina. There was no history of vaginal discharge. One and a half years before, after urinating, the patient was seized with a sharp, knifelike pain in the right loin when she attempted to stand up. The pain began in front and radiated to the back. It was so severe that she fell to the floor. Following this attack, she was in bed for eight or nine weeks, and during this time was unable to move on account of the pain, which no longer was related to urination. Ever since then the patient had felt in danger of pain, sometimes with very acute attacks. During the intervals of comparative freedom she was able to bend forward and to move her trunk in any direction. During the past ten days, the pain had been severe, especially if the right arm was raised above the head, or if the right side was pulled or twisted. The pain was in the right side and back, but did not cross to the left of the spine. Frequently there was a dull ache in the spine, back of the head and chest which was unrelated to the pain in the lower back. This ache was worse in damp weather.

Periodicity: The patient had not been entirely well during the past five years. She always felt better in the autumn. Her symptoms all became most noticeable about December. During the past two years, she had been confined to bed during the late winter and spring, on account of the severe pain and general tenderness.

Physical Examination.—The patient was well developed and fairly nourished, conscious and rational, and lay quietly in bed with the eyes closed. The hair was abundant and of fair texture, but short, being only about 10 inches in length; the ends were broken off abruptly. The patient said that her hair used to be of finer texture and about 40 inches long. The skin was rather dry. On the face, most marked on the cheeks, there was a brownish-red pigmentation which was not sharply demarcated, but faded off gradually. There were many punctate papules; to the touch the cheeks felt like a nutmeg grater. On the back between the shoulders, there were small acneiform papules and pustules. There was a wart on the back of the left hand and on the palm of the right, which, the patient said, had been present for only a few weeks. The skin was otherwise negative. The conjunctivae were reddened and the patient kept her eyes closed most of the time because the light caused discomfort. The pupils were regular, equal, and reacted to light. The teeth were fair, the throat negative; the buccal mucous membrane was normal; the tongue was normal, except that the fungiform papillae at the back seemed unusually large and red. The lymph glands were not enlarged. The heart and lungs were normal. There was a slight general tenderness of the abdomen, most marked in the lower right quadrant. No masses were felt. There was no fluid. The patient had difficulty in turning over; the act seemed to be painful. There was no local tenderness in the back. There was no tremor of the hands. There was slight edema of the ankles on pressure. The knee jerks were very sluggish; the plantar reflexes also were sluggish. There was no Babinski reflex. The hand grasp was equal but weak. There was no Romberg sign. The finger-to-nose test was negative. The temperature was normal. The pulse was about 100. Pelvic examination was negative.

Summary.—A farmer's wife, aged 22, had been intermittently ill during the past five years, worse in the late winter and early spring. The outstanding symptoms were dermatitis with pigmentation of the face, muscular weakness, loss of weight, sore mouth, gastric discomfort, constipation, disturbances in taste, smell and cutaneous sensations, photophobia, menstrual irregularities, tachycardia, and many indefinite pains, aches and burning sensations. She had been unsuccessfully treated by many physicians and had tried all remedies that had been recommended by both physicians and friends.

Before the laboratory findings were considered, four conditions offered themselves as reasonable possibilities in the differential diagnosis. They all fairly adequately accounted for the symptoms as summarized.

1. Neurasthenia or psychoneurosis.
2. Pellagra.
3. Addison's disease.
4. Chronic arsenic poisoning.

Other conditions were thought of, such as renal stone and tuberculosis of the spine, but each accounted for only a part of the syndrome.

With a highly strung and unstable nervous system as a background, any chronic, unsuccessfully treated dermatitis may readily develop into an attack of neurasthenia with a varied host of symptoms similar to those described.[1]

Pellagra must be seriously considered, for it also is characterized by periodicity, weakness, neuritis, gastroenteritis, stomatitis and dermatitis. In the case under discussion, the chief point against pellagra is the character of the dermatitis. In pellagra, the backs of the hands and wrists are usually involved, and whatever region is involved shows a sharply demarcated area of pigmentation. Here the pigmentation is limited to the face, is diffuse, and is rather more finely papular than one would expect with pellagra.

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[1] Osler: The Principles and Practice of Medicine, Ed. 8, pp. 1106-1116.

Addison's disease usually shows a more generalized pigmentation and frequently a pigmentation of the buccal mucosa.

According to the history as it was obtained after careful questioning on several occasions, the only known exposure to arsenic occurred five years before when the patient used arsenic sprays in fruit orchards. For the past three years, she had lived in a different place where there were no fruit trees, and she had not used any spraying mixtures. It is possible that some of her many remedies contained arsenic, but no single medicine had been used longer than a few weeks. Her brother's supposed appendicitis, which had been unrelieved by operation, and her sister's skin eruption suggest that the whole family had been exposed to arsenic.

Laboratory Examination.—Blood: 1. The systolic blood pressure was 120 and the diastolic, 85. This evidence points strongly against Addison's disease.

2. The Wassermann reaction was negative.

3. Microscopic examination revealed: white cells, 12,900; red cells, 4,500,000; hemoglobin, 95 per cent.; the red cells were normal: there were no malarial parasites.

Roentgen-Ray Studies: The teeth, spine, lungs and heart were all normal. There seemed to be some adhesions between the duodenum and gallbladder, but the stomach was otherwise negative; there was no filling defect, and the emptying time was normal.

Gastric Analysis: An Ewald test meal was given. After one hour, 100 c.c. of gastric contents were withdrawn. The odor was normal, there was no retained food, and microscopic examination was negative. Total acidity was 83; free hydrochloric acid, 51. There was no lactic acid nor blood.

Ophthalmoscopic Examination: This revealed dilated retinal veins and contracted arteries. These findings were regarded as unimportant and indicating merely vasomotor changes.

Stool: Macroscopically the stools were of a claylike consistency and rather gray. Microscopically there was bile-stained mucus, and no parasites or parasitic ova.

Urine: The urine was acid; the specific gravity was 1.017; there was slight trace of albumin; there were a few pus cells, red cells, occasional epithelial cells, hyaline casts and coarsely granular casts. A specimen submitted to the Kansas City Testing Laboratory for an analysis of metals was reported as containing: lead, 0; arsenic, 0.000329 per cent. Following this line of inquiry, a sample of wall paper and of well water from the patient's home were also tested for arsenic. The wall paper was found to contain arsenic (As_2O_3), 0.00307 per cent.; the well water was found to contain arsenic (As_2O_3), 0.00044 per cent.

DIAGNOSIS AND TREATMENT

The finding of arsenic in the urine, together with the typical symptoms of chronic arsenic poisoning make the diagnosis practically certain. The patient was once more questioned concerning a more recent exposure to arsenic. The husband then recalled that for the past two years he had used a Paris green mixture in spraying his potato plants. The patient remembered now that this mixture had been kept in a box in the kitchen, and to the best of her knowledge was still there. The fact that Paris green was kept in the house, and also the fact that the wall paper contained arsenic explains the winter exacerbations of all symptoms. At this time the patient spent more time indoors, and the windows were more likely to be closed; hence the greater opportunity to absorb arsenic vapors.

Undoubtedly the patient became thoroughly poisoned with arsenic five years before when she sprayed fruit orchards, and her illness had been prolonged by the subsequent absorption of small amounts of arsenic either from the box of Paris green or from the wall paper or from both. It is well known that in the presence of warmth and moisture, certain molds growing on arsenic wall paper liberate a poisonous volatile compound that is probably an organic derivative of arsenic pentoxid. According to Putnam,[2] "there is nothing more striking in the clinical history of this matter than the fact that a person who has once been poisoned, or who is naturally susceptible, is sometimes affected by exposures that seem absurdly insignificant." Putnam[3] also calls attention to the diffuse brownish pigmentation of the face, painful micturition, and distinctly periodic symptoms (winter and early spring) in addition to the commonly observed gastro-intestinal and nervous disorders.

The treatment consisted essentially in removing the source of poisoning and treating the gastro-intestinal disturbances symptomatically, with daily colonic irrigations of sterile water and a light diet of cooked food. According to latest reports a month later, the patient had improved markedly. The prognosis in this case is good because the peripheral neuritis has not progressed to an irreparable state.

CONCLUSIONS

This is a well marked case of chronic arsenic poisoning with an adequate etiology, and a definite finding of arsenic in the urine. The syndrome as developed here is remarkable for its multiformity. This patient showed loss of weight, muscular weakness, disturbances of the tactile and other special senses, digestive disorders, sore mouth and tongue with salivation, menstrual disorders, especially periods of amenorrhea, painful conjunctivitis, dry and defective hair, painful urination, tachycardia, loss of appetite, headache, diffuse pain and tenderness, and dermatitis which had been general, but at the time of examination was limited to the face and consisted of a roughening with diffuse brownish pigmentation. All of the symptoms were worse in the winter or early spring. When confronted with such a syndrome, one which is not typical of any well recognized disease, one should always think of chronic arsenic poisoning, and have the urine examined for arsenic by a competent laboratory, or by any one of several tests which are described in detail in textbooks on toxicology or industrial medicine.

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[2] Putnam, J. J.: Boston Med. and Surg. Jour., 1890, **122**, pp. 421-424.

[3] Putnam, J. J.: Boston Med. and Surg. Jour., 1889, **120**, 255.

Increased Importance of Venereal Prophylaxis.—The end of actual fighting in the world war does not lessen the necessity for the campaign against venereal diseases. Rather, it becomes a greater emergency measure than ever. Cessation of hostilities centers attention on the return of the victorious American forces. On entering the service the men became subject to Army and Navy discipline, which, in the control of venereal diseases within the ranks, is rigid. Prior to demobilization the intense fighting morale of the forces is bound to relax. The men will be buoyant in spirit and eager to celebrate. When mustered out they will return to conditions in civilian life which have been responsible for venereal disease. Many of them will contract it as a result. Unless all cases of venereal disease have proper treatment during the period of reconstruction, the scourge will reach alarming proportions. The time from now on is the most critical of all.—*Public Health Reports.*

TREATMENT OF TETANUS

REPORT OF CASE

MANUEL D. ROJAS, Ph.C., M.D.
Assistant Surgeon, Limón Hospital
LIMÓN, COSTA RICA

History.—N. B., a white man, aged 24, was admitted to the hospital, May 24, 1918, complaining of stiffness in his jaws, but still able to talk. He was a shoemaker, but for the past three months had been working as watchman at one of the railroad stations. The family history was negative. The patient had the usual diseases of childhood, had had gonorrhea twice, and a chancre about a year before. Recently he had been in perfectly good condition until about 3 o'clock on the morning of admission, when he awoke with stiffness of the neck, and had difficulty in opening his mouth. He said: "I have been in such good health that I expected to get married in a week." He did not recall any previous accident. There was no history of any cut or puncture for the past three months. On admission he was not aware of any fever, headache, languor or rigidity of the extremities. The bowel movements were regular, the appetite good, and there was no sore throat.

Physical Examination.—The patient was well developed. The head was negative; there was some rigidity of the neck, and there was slight spasms of the masseters. Although spasms of the jaws had already begun, I was able to remove the man's false teeth, and noticed an erosion in the upper gums, but no signs of local infection. The lungs were negative, but the patient complained of a heavy sensation in the lower part of the chest. The heart rhythm was regular. No enlargement and no murmurs were detected. The abdomen and the upper extremities were negative. In the lower extremities there was some rigidity and exaggeration of the reflexes, and Kernig's sign was present. I was unable to detect any erosion of the skin, except for that already mentioned, in the mouth. From the foregoing data it was clearly seen that no period of incubation could be appreciated in this case. On admission the temperature was 99 F., pulse 86, and respiration 22. The Laboratory reported that the urine was negative. The total white blood count was 8,463, the hemoglobin, 75 per cent.

Treatment and Course.—At the beginning I diagnosed tetanus. I ordered an intramuscular injection of 3,000 units of tetanus antitoxin, and gave 30 grains of potassium bromid every three hours.

I called Dr. A. A. Facio in consultation, and he agreed with me that the case was one of tetanus. He suggested that the tetanus antitoxin be given intravenously instead of intramuscularly, and also that potassium bromid and chloral hydrate, one-half ounce each, be given during the twenty-four hours by the rectal drip method.

In the evening of the day of admission the patient became worse, the rigidity of the neck and lower extremities more pronounced. Risus sardonicus was plainly shown, and the patient called attention especially to sharp lancinating pains at the base of the chest. I gave 5,000 units of the tetanus antitoxin intravenously. About 11:30 p. m., the patient became so distressed that it was necessary to give chloroform inhalations, and with this he rested somewhat. On the morning of the 25th, he presented a typical example of acute tetanus; orthotonus, opisthotonos and convulsive dysphagia were prominent symptoms. An enema was given, and good results were obtained. Intravenous injections of 5,000 units of tetanus antitoxin were repeated every six or eight hours, also the oral and rectal administration of potassium bromid and chloral hydrate.

This treatment was continued until the morning of the 29th, when the condition of the patient became so grave that some change in treatment was indicated. By this time the patient had received 68,000 units of serum antitoxin without having noticed any relief. Tetanus antitoxin, potassium bromid and chloral hydrate were discontinued. I was fearing some lung complication and for this reason also discontinued the chloroform inhalations. Baccelli's treatment was instituted. This consists in the intradermal injection of a 3 per cent. solution of phenol (carbolic acid) in water, 2 c.c. every three hours. The injections were given on each side of the spinal column, approximating more or less the exit of the nerve trunks. I also gave injections following the course of each sciatic nerve.

During the first ten days of Baccelli's phenol treatment, the intradermal injections were repeated as often as every hour with an average of about fourteen injections a day, that is, seven injections on each side of the spinal column. Later, as improvement began, the injections were given every two or three hours, applied mostly on the lower lumbar regions and along the course of each sciatic nerve.

The convulsive dysphagia and other painful symptoms, due to muscle rigidity, were treated by half a grain of morphin day and night with very good results, to the extent that the patient could have some rest.

I calculated that during the forty-seven days of phenol treatment, the patient was injected with about 450 c.c. of a 3 per cent. phenol solution, which is equivalent to 13.5 c.c. of pure phenol, without detecting any renal complications.

From May 28 to June 14 the patient was fed by rectum, and through the nares by means of a soft rubber catheter.

Besides the milk and other liquid foods, brandy was also given (about 2 ounces in twenty-four hours).

By June 15 the rigidity of the masseter muscles became much less and the patient was able partially to open his mouth. By June 26 he was able to open his mouth well and swallow the liquid food. The convulsive dysphagia was not so severe, but the rigidity of the lower extremities was still quite prominent. I found that the injections of phenol along the course of the sciatic nerves minimized considerably the painful rigidity of the lower extremities.

June 30 I discontinued the morphin and gave instead potassium bromid and chloral hydrate, 15 grains of each every four hours. This dose was now apparently sufficient to counteract nervous irritability.

All signs of muscular rigidity had disappeared by July 9, on which day I discontinued Baccelli's treatment and also the administration of potassium bromid and chloral hydrate. By this date the patient was emaciated, pale, and in a state of stupor, but he did not complain of any pains. Hemoglobin was only 55 per cent. A dose of calomel and magnesium sulphate was given, full diet was resumed, and 1 dram of elixir of ferric pyrophosphate, quinin and strychnin was given three times a day before meals. The patient recovered very rapidly, and was discharged, July 19, apparently in good condition.

The temperature during this time was 98 from May 24 to May 27; between 98 and 101 from May 27 to July 10; on the latter day it reached 103, and from July 11 to July 19 it was normal.

The highest rapidity of pulse and respiration was observed between May 27 and June 12, when the pulse rate was 110 and the respiration 28. It is worth while to notice that improvement began to be more rapid after June 11, when I added to the other treatment 10 grains of hexamethylenamin three times a day, and advised the patient to drink plenty of water. This increased diuresis considerably, and undoubtedly had something to do with a greater dilution and elimination of the tetanus toxin.

COMMENT

From this case we can see once more that the administration of antitetanic serum, once that the toxin has been fixed in the nerve cells, is of doubtful value either in preventing the further development of the disease or in minimizing its severity and duration. During the acuteness of the attack I found morphin superior to potassium bromid and chloral hydrate in relieving the painful muscular rigidity. It makes respiration easy, the patient sleeps better, and the nervous irritability is much decreased.

Baccelli's phenol treatment undoubtedly has an effect in neutralizing some of the tetanus toxin, and possibly inhibiting the growth of the bacillus. Diuresis, stimulated by the injection of fluids and the administration of hexamethylenamin, is useful because it diminishes the concentration of toxin products by a greater dilution and elimination of them from the body. Of course, the administration of large amounts of fluid to provoke diuresis depends on the condition of the patient's circulation.

METHOD FOR THE ISOLATION AND RAPID IDENTIFICATION OF DYSENTERIC BACILLI *

I. J. KLIGLER, Ph.D.
AND
PETER K. OLITSKY, M.D.
NEW YORK

Bacillary dysentery is endemic in the United States, and localized epidemics occur from time to time. Our Army and Navy particularly stand in danger from this disease. Of late, confusion has arisen regarding its etiology, as a result of the failure of the isolation of *B. dysenteriae* from the stools of patients. These factors have led us to devise an improved method of isolation and rapid identification of these organisms.

The failure on the part of some workers to isolate the true dysentery bacilli from cases of clinical dysentery is attributable largely to two factors: (1) the improper selection of stool specimens for cultures, and (2) the use of unfavorable culture mediums.

1. *Selection of Stool Specimens for Plating.*—Too much emphasis cannot be laid on the importance of choosing a satisfactory sample of stool. If possible, one containing blood and mucus with little or no fecal matter should be used. It is essential to plate the stool directly or very shortly after it is collected. Experiments with artificial mixtures of the Shiga bacillus with feces showed a 50 per cent. reduction in four hours and from 85 to 90 per cent. in twenty-four hours, when kept at room temperature.

2. *Mediums Used for Plate Cultures.*—Because of the extreme toxicity of dyes for dysentery bacilli, the selective inhibitive mediums used in the isolation of typhoid and paratyphoid bacilli are not applicable here. Consequently the medium most widely used in this country is Endo's, and in England, MacConkey's. The shortcoming of the Endo plate as originally proposed has been realized by workers in this field, and various modifications have been suggested. Kendal, Rettger and Robinson, Kligler and Defandorf successively proposed modifications. The first and last named authors recognized the fact that dysentery bacilli, particularly the Shiga variety, are highly sensitive to alkaline reactions and dyes, and are either partially or wholly inhibited on the original Endo medium, which is distinctly alkaline and contains an excessive amount of the fuchsin indicator.

The Teague and Clurman eosin-methylene blue medium with meat infusion as a base proved entirely unsatisfactory because of its inhibitive effect on Shiga dysentery bacilli. Recently, however, Meyer and Stickel have published comparative data indicating that the eosin-blue medium with veal-agar or pepsin-digest agar as a base gives better results than the Endo as modified by Kendal. The eosin-blue plate cultures show striking colony differentiation and have the added advantage of being at or near the neutral point. Comparative tests were made with various mediums, the results of which are shown in the accompanying table. The strains of the Shiga bacillus used were all isolated last summer and are undoubtedly more sensitive indicators of the favorableness of a given medium than old stock strains. The results indicate clearly that the veal infusion eosin-blue and modified Endo mediums are superior to the phosphate-peptone, the pepsin digest and the old unmodified Endo mediums. This superiority is also demonstrated when one compares the sizes of the colonies on the different plates.

COMPARISON OF RATIO OF B. COLI TO B. DYSENTERIAE COLONIES ON DIFFERENT PLATING MEDIUMS INOCULATED FROM THE SAME MIXTURES *

Medium Used	Flexner Strains						Shiga Strains				Average Size of Colonies in Mm.
	23	24	26	28	31	J	100	109	2X	V. T.	
Veal infusion eosin-methylene blue....	3:1	2:1	2.5:1	5:1	Spread	3:1	3:1	2:1	50:0	Crowded	1.5
Veal infusion Endo (Kligler's modification)........	3:1	1:1	3:1	1.5:4	Spread	5:1	3:1	Spread	50:1	Crowded	1.75
Veal infusion Endo (old method).....	4:1	48:0	7:1	5:1	48:0	35:0	200:1	40:1	200:0	2:1	0.5
Phosphate, eosin-methylene blue (Levine)........	2:1	2:1	5:1	3.5:1	2:1	6:1	50:1	4:1	17:1	1:2	1.0
Peptic digest, eosin-methylene blue (Meyer and Stickel)........	2:1	1:1	4:1	6:1	2.5:1	5:1	5:1	5:1	30:1	1:5	1.0
Peptic digest, Endo (Kligler's modification)........	4:1	1:1.5	7:1	Spread	4:1	3.5:1	2.5:1	2.5:1	36:1	1:2.5	0.8
Peptic digest, Endo (old method).....	Spread	1.5:1	7:1	Spread	4:1	....	3:1	6:1	33:1	Spread	1.0

* The figures indicate the ratio of the number of colonies of B. coli to those of B. dysenteriae. The marked inhibitive effect of the Endo medium prepared in the old way, titrating to +0.2 to phenolphthalein, on the Shiga types and the advantage of veal infusion medium are strikingly brought out in this table. "Spread" indicates that count was impossible as a result of confluence of colonies.

Practically, the slight inhibitory effect of the veal infusion eosin-blue medium on Shiga bacilli is overcome by inoculating this type of medium as well as the modified Endo medium[1] with the same specimen.

PROCEDURE

As a result of these tests, and experience in practical work and class work, we recommend the following procedure in the isolation and rapid identification of dysentery bacilli from stools:

A fresh specimen of stool, preferably with blood and mucus, is collected and promptly cultured. A shred of bloody mucus, if present, is selected, washed three or four times with sterile saline, to remove all fecal matter, and spread successively on a veal infusion eosin-methylene blue and a modified Endo plate. The plates are then incubated from eighteen to twenty-four hours at 37 C.

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* From the Laboratories of the Rockefeller Institute for Medical Research.

[1] The modified Endo's medium is prepared as follows: To veal or beef infusion 1.5 per cent. agar, titrated, and this is important, to *pH* 7.6 to 7.8, is added 1 per cent. lactose and 1 per cent. by volume of decolorized basic fuchsin indicator. The latter is prepared by adding 1 c.c. of 10 per cent. basic fuchsin to 10 c.c. of 10 per cent. sodium bisulphite solution. Of course, the lactose and the indicator are added separately before plates are poured.

The eosin-blue medium is prepared by adding to the veal infusing agar titrated to *pH* 7.2 to 7.4, 1 per cent. lactose and 2 c.c. of a 2 per cent. solution of yellow eosin and 2 c.c. of 0.5 per cent. solution of water-soluble methylene blue.

The plates are now examined and the suspicious, colorless colonies inoculated into each of two differential tubes:

(*a*) A small tube containing 1 c.c. of a 0.5 per cent. glucose broth.

(*b*) A double sugar tube on the principle of the Russell double sugar medium containing 0.1 per cent. glucose, 0.5 per cent. mannite, and 1 per cent. Andrade indicator.

The colony is picked off with a small loop and inoculated first into the broth and then stabbed in and streaked on the double sugar tube.

After from two to four hours the broth tubes are usually sufficiently turbid for an agglutination test with a polyvalent antidysenteric serum. A faint visible turbidity is sufficient, and when it appears, 0.1 c.c. of a 1:50 dilution of a potent polyvalent antidysenteric serum is added and the tubes reincubated for one hour. A definite clumping is a good presumptive test for the presence of dysentery bacilli.

The double sugar tube is incubated over night. A red butt without gas and colorless slant indicates a Shiga bacillus. If the entire tube is red and gas absent, it corresponds to a Flexner type. The surface growth is now washed off with saline and a confirmatory agglutination test is made with specific type and polyvalent serum. If desired, an agar slant and various sugar mediums may be inoculated for further study, or animal inoculation made.

By the use of the two tubes, one can obtain a presumptive diagnosis about a day after the collection of the stool—a matter of great importance for epidemiologic and therapeutic purposes.

CONCLUSIONS

1. Fresh specimens preferably containing blood and mucus should be cultivated promptly.

2. Mediums for the isolation of dysenteric bacilli should not have a marked alkaline reaction or an excessive amount of inhibitive dyes. Mediums neutral or only slightly alkaline are most suitable. Veal infusion agar is a much more satisfactory base for differential plate cultures for the isolation of dysenteric bacilli than is beef infusion or peptic digest agar. Eosin-methylene blue and modified Endo plates (*p*H 7.6 to 7.8) made with veal agar exert little or no inhibitive effects and permit the colonies to grow to almost twice their size on other mediums. Since the dye medium is apt to be somewhat inhibitive for the Shiga type of dysentery bacillus, it should always be used together with a modified Endo plate.

3. The method given permits a presumptive and confirmatory diagnosis of bacillary dysentery in a very short time.

Regulating the Distribution of Quinin.—The Brazilian government has promulgated regulations for the purchase and sale of quinin for use in overcoming destructive endemias in the rural sections. The drug will be purchased either in foreign or domestic markets in the shape of salts of quinin, and cinchona bark will also be imported and extracted in the Oswaldo Cruz Institute. When prepared the quinin will be sold in tubes officially sealed with a government stamp and marked with a label indicating the quantity, quality and official price. The tubes will be furnished to pharmacies and to other distributors, especially throughout the malarial sections of the country, with the requirement that they shall not be sold at a profit exceeding 10 per cent., under penalty of fine for violation of the price regulation. According to *Commerce Reports*, from which this information is obtained, the federal railways will be furnished the official quinin and will distribute it without cost to employees. Other industries may purchase it for free distribution at a rebate of 10 or 20 per cent.

THE EFFECT OF "GROUND GLASS" ON THE GASTRO-INTESTINAL TRACT OF DOGS

JAMES S. SIMMONS, M.D. (PHILADELPHIA)
Major, M. C., U. S. Army
AND
WILLIAM C. VON GLAHN, M.D. (BALTIMORE)
First Lieutenant, M. R. C., U. S. Army
FORT SAM HOUSTON, TEXAS

During the past few months quite a number of food specimens have been received at the Southern Department Laboratory, Fort Sam Houston, Texas, with requests for examination to determine the presence of "ground glass."

Of 120 specimens of different kinds, glass was found in the following samples: cakes, 2; cottonseed hulls, 5; jelly, 1; milk, 1; prepared mustard, 1; peanut butter, 1; sliced beef, 1, and sugar, 1.

The glass found in many of these specimens was small in size and amount, and could have been accidental. Some few samples of food in closed nonsealed containers, however, showed many large pieces of broken glass, which, apparently, had been placed there purposely by those sending in the specimens.

Many reports of so-called "glass poisoning" were made by newspapers and individuals, and the subject was discussed in a number of medical journals throughout the country, but we have not been able to obtain positive data concerning a single authentic case of illness due to the ingestion of glass in any form or size. A partial review of the literature gave no definite information.

FEEDING EXPERIMENTS

In an attempt to determine what lesions, if any, are produced by glass in the gastro-intestinal tract, feeding experiments were carried out on dogs.

Dogs.—Ten young dogs obtained from the city pound of San Antonio, Texas, were placed in separate cages, numbered, and fed on scraps from the hospital mess. Records were made of the general appearance, weight, temperature (by rectum), blood count and feces examination (both gross and microscopic) for blood, pus, epithelium, etc. All these records, with the exception of blood counts, were made daily, until the completion of the experiments, when the animals were chloroformed and examined postmortem.

Glass.—Broken Petri dishes and test tubes were ground in a large stone mortar, after which the glass was divided into five sizes by passing through sieves of different mesh. The different grades of glass used ranged from Grade 1, which was designated "large broken," to Grade 5, called "fine powdered." A large amount of each grade was prepared and bottled.

Dosage.—The ten animals were divided into two series of five each. Dogs of Series 1 received 1 gm. of the grade of glass corresponding to the cage number, while Series 2 (Dogs 6 to 10) received 5 gm. doses in the same order. Thus, Dogs 1 and 6 received Grade 1 glass, but Dog 6 received 5 gm., while Dog 1 was only given 1 gm. doses.

Each dose of glass was mixed in a mortar with about 200 gm. of lean meat and immediately fed to the dog. All grades, except Grade 5, were easily detected in the food with the naked eye. The first two doses were given at four-day intervals, but after that they were repeated daily until the animals were chloroformed. (The second dose in each case, owing to a mistake, was of different grade glass.)

Weights.—The original weight was accepted in each case as normal, and the fluctuations that were recorded represent merely loss or gain in pounds.

The weight curve in each case showed fluctuations, and in five of the dogs there was a slight loss of weight as shown on the day of necropsy, averaging about one-half pound. Two of the dogs showed marked gain in weight, and in three the initial and final weights were identical.

Temperature.—These records by rectum showed nothing remarkable except in Dog 5, which had a temperature of 104 F. on two occasions: May 21, twenty-four hours after receiving the first dose of glass, and May 24, when the second dose of glass was given. The rise in temperature was probably due to some other cause, as it was only temporary and as Dog 10, which received five times as much of the same grade of glass, was not similarly affected.

FLUCTUATIONS IN WEIGHT

Number of, Animal	Weight Gained	Weight Lost
1	....	½ pound
2	....	½ pound
3	None	None
4	3 pounds	
5	None	None
6	....	½ pound
7	....	1 pound
8	....	½ pound
9	1 pound	
10	None	None

Number of animals that gained weight	2
Number of animals that lost weight	5
	Pounds
Average weight gained	6
Average weight lost	6

Feces.—All daily examinations were negative for blood and pus. Dog 5 showed a slight temporary diarrhea with some mucus at the time of the rise in temperature, after which the stools were negative. Practically all the dogs were infected with *Uncinaria* and *Taenia*.

Necropsy Findings.—The dogs were killed with chloroform and immediately examined. The postmortem findings were remarkably uniform in the absence of any visible lesions. As the findings were so similar, detailed account of each will be omitted and one protocol given:

> The peritoneal surfaces are smooth and glistening and there is not any excess of fluid in the peritoneal cavity. The omentum contains much fat. The intestines are not distended. The lymphatics are engorged and beautifully marked out so that they are easily traced from the intestine through the mesentery to the glands. The stomach contains a large amount of undigested food in which particles of glass are readily discernible. The gastric mucosa is gray and translucent. There is no ulceration nor any evidence of hemorrhage. The intestine contains a moderate amount of digested food in the upper half. The intestinal mucosa is gray and translucent, and there is no ulceration, hemorrhage or exudate present. There are several taeniae and many uncinariae present in the lower portion of the bowel. The lungs, heart, spleen, pancreas and liver are negative.

The postmortem findings in the control dogs were identical, except for the absence of glass.

For the microscopic preparations from six to twelve segments of the intestine from different portions were removed before the bowel was opened. This was done to avoid the possibility of any trauma to the mucosa while opening the bowel. These segments measured from 5 to 10 mm. in length. The stomachs were opened before the specimens for microscopic examination were removed. The tissue for examination was immediately placed in 10 per cent. solution of formaldehyd. The paraffin method was used in the preparation of the material for sectioning.

The findings microscopically were equally negative. The sections from the stomach of each of the dogs and from the control dogs did not show any abnormal changes. The epithelium was intact and there was not seen any infiltration with leukocytes or small round cells of the mucosa, submucosa or muscular layers in some of the sections. From the intestines of four of the dogs (3, 4, 6 and 7) there was seen some denudation of the tips of some of the villi of their epithelium. There was not, however, any exudate on the surface of the villi, or any inflammatory reaction within them. No other abnormal changes could be found in any of the sections. The central lacteals and lymphatics were engorged in those dogs that were examined during the period of active digestion. The gross and microscopic findings were identical on the dog that was given one large dose of glass (50 gm.) and examined postmortem forty-eight hours later.

In both of the control dogs, denudation of the tips of some of the villi of their epithelial cells was observed.

CONCLUSION

The ingestion of ground or powdered glass has no toxic effect and produces no lesion, either gross or microscopic, on the gastro-intestinal tract of dogs.

OBSERVATIONS ON AN EPIDEMIC OF BRONCHOPNEUMONIA IN OMAHA [*]

A. D. DUNN, M.D.
OMAHA

Late in September and in the early days of October, a respiratory affection corresponding somewhat closely to the descriptions given of "Spanish influenza" appeared in Omaha. October 3 and 4, a large number of people congregated in the theaters, stores and streets, incident to the civic parades and other functions of the Aksarben festival, which yearly brings huge crowds to Omaha. October 5 and 6, the disease attained the proportions of an epidemic. We also have information that a considerable number of cases appeared among the troops in Fort Omaha on the second day following the Aksarben. The morbidity curve showing the influence of "crowds" on the outbreak of the epidemic is significant (Chart 1).

THE NATURE OF THE EPIDEMIC

Clinically, the disease was characterized by a more or less sudden onset, usually without definite prodromes. Headache, generally severe, was almost constant and commonly associated with backache, boneache and general malaise. Cough, which was slightly productive or nonproductive in the beginning, was always present. The sputum was not tenacious but mucoid. Its color varied from a slight, diffuse, bloody discoloration to a deep bloody red. The sputum never took on a typical rusty appearance. Toward the end of the disease a suggestion of rustiness was occasionally present. Cyanosis was uniformly present and was disproportionate in degree to the severity of the disease except in the moribund. The temperature curve was either of the remittent or the continuous type. Reverse types were common. Drops of lysis predominated (83 per cent). Considering the severity of the symptoms, the pulse was slow except in the moribund. Death seemed rather of a respiratory than of a cardiac type. Delirium was usually absent. Gastro-intestinal symptoms were common (50 per cent). Herpes was rare. The most constant feature was the presence of findings pointing definitely to pulmonary involvement. The lungs of all the patients under observation were examined at least once a day, and whenever any change in the pulse-temperature curve or in the clinical course occurred. In no instance was a typical "flu" case of any considerable duration observed that did not at some stage of the disease reveal lung findings, such as signs of increased density to palpation and percussion, altered breath sounds, or localized moisture evidenced by fine or small moist râles. Lung findings diagnostic of bronchopneumonia were absent in only 18 per cent. of the hospital admissions. The latter cases were in all instances mild, being of from one to three days' duration. Pleurisy was exceptional, although pains in the chest were common. Although the observations were made largely in hospital cases, and although it might be argued that only the severe cases would gravitate to the hospitals, yet whenever accurate clinical observations were made, they supported the assumption that we were dealing with an *epidemic of bronchopneumonia*.

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[*] This investigation was made by the University of Nebraska and Creighton Medical colleges at the instigation of the Omaha Department of Public Health.

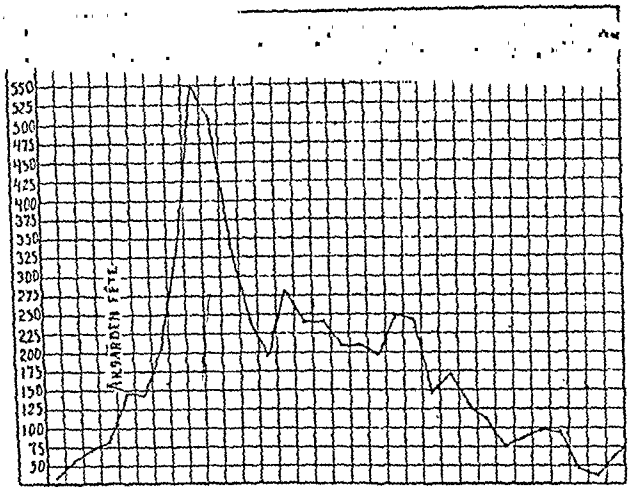

Chart 1.—Morbidity curve showing the influence of "crowds" on the outbreak of influenza.

Two hundred consecutive leukocyte counts averaged 11,950 cells with 72 per cent. polymorphonuclears. The leukocyte count seemed at times to have prognostic worth. Low leukocyte counts occurred most commonly in the severer cases. Rises in the leukocyte count often presaged improvement, and sharp drops in the count were ominous. Chart 2 illustrates a typical leukocyte curve in a fatal case.

An interesting fact was the relative infrequency in the disease history of the patients of antecedent respiratory infections, as bronchitis, tuberculosis, catarrh, nasal disease, diphtheria, pneumonia or pleurisy. This is suggestive of a degree of active immunity in individuals who have previously suffered from respiratory disease. Fatalities were most common among the robust. The average age of our patients was 23.5 years.

ETIOLOGY

Bacteriologic studies were carried out on material derived from sputum, blood cultures, necropsies and pleuritic exudates. Smears and cultures constantly revealed a diplococcus resembling in many ways the pneumococcus, but giving atypical cultural reactions. The organism was gram-positive, with a tendency to short chain formation. Capsules could not be definitely demonstrated with the usual capsule stains, but a suggestive halo was frequently encountered. The growth of the organism on ordinary culture mediums was exceedingly difficult, and even on special mediums the growth was decidedly delicate. Litmus milk containing blood and blood agar proved most satisfactory. Many strains refused to grow beyond several transfers. The original cultures coagulated milk in forty-eight hours, which reaction often failed to occur after several transfers, the organism frequently dying out even when transferred every three to four days on blood mediums. Bile solubility was variable (positive in 40 per cent). Inulin and litmus milk were usually acidified and coagulated. Mice were decidedly susceptible, and died in from twelve to eighteen hours after intraperitoneal inoculation, and the organism was constantly recovered from the heart's blood. The virulence of the organism diminished rapidly when grown on artificial mediums, and several transfers usually sufficed to render it avirulent. Only a limited number of strains have been typed, but the majority of these have failed to agglutinate.

Every effort was made to recover other types of organisms, especially the Pfeiffer bacillus, but without success. Anaerobic and varying oxygen tension cultures after Rosenow's method were made as a routine. It is of interest to note that positive blood cultures were obtained as a rule only at the height of the disease, and then only in the moderately severe or in the severe cases. This is suggestive of a descending respiratory rather than a hematogenic mode of infection.

All the necropsies thus far made have shown a bronchopneumonia of a hemorrhagic type except in one instance in which the pneumonia was of the typical lobar form, and the organism isolated from the blood culture and at the necropsy proved to belong to the Type II pneumococcus. It was noted clinically that this case was probably an ordinary pneumonia and was not of the prevailing epidemic.

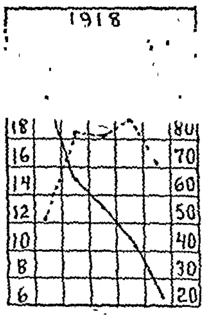

Chart 2. — Typical leukocyte curve in a fatal case of bronchopneumonia. The column at the left gives the number of leukocytes in thousands, and is represented by the solid line; the column at the right, the percentage of polymorphonuclears, and is represented by the broken line.

CONCLUSIONS

1. The clinical and laboratory observations made to date go far to support the assumption that we are dealing in Omaha with an epidemic of atypical bronchopneumonia. It would be reasonable to assume that in mild cases which do not develop demonstrable lung disease (and from our experience they must be rela-

tively few) there is a partial active immunity which accomplishes an early abortion of the disease, or that the infecting organism was avirulent. We consider bronchopneumonia the one characteristic clinical and pathologic finding in our epidemic (82 per cent.) In other words, *the so-called complication is the disease.*

2. Bacteriologic examinations thus far made reveal an organism which seems best classified as an atypical pneumococcus and which we consider to be the probable cause of the epidemic.

Further clinical, bacteriologic and immunologic studies are under way.

808 Brandeis Theater Building.

PHLEGMONOUS GASTRITIS

REPORT OF CASE

F. I. SHATARA, M.D.
BROOKLYN

Phlegmonous or submucous gastritis is a rare condition. It was first described by Benel in 1656. In 1904, Robson and Moynihan collected eighty-five instances, and up to the present about 100 cases in all have been reported.

The condition is an acute suppurative inflammation affecting oftenest the submucous coat of the stomach, and extending to the muscular and serous coats more frequently than to the mucous. It is sometimes primary, but usually secondary, occurring in the course of such diseases as typhoid, scarlet fever, smallpox or puerperal septicemia. Two forms have been described, a diffuse and a circumscribed.

The etiology is not definitely known. Of the several theories that have been advanced, the bacterial seems to be the most plausible. Streptococci are the commonest micro-organisms present; colon bacilli have been occasionally demonstrated. In the case here reported, streptococci were demonstrated in the stomach wall by the Gram-Weigert stain. In secondary cases it is probable that the infection is carried by the blood stream. It is held by some that the invading organisms enter through traumatic or other lesions in the epithelium. Symmers, at Bellevue Hospital, however, failed to produce the lesion in animals by feeding them ground glass and inoculating streptococci and pneumococci by way of the blood stream or stomach tube, and the association of phlegmonous gastritis with such lesions as ulcer and cancer is almost unkown. The pyloric region of the stomach seems to be the site of predilection, although the process may involve the entire stomach.

The onset is sudden with symptoms of intense gastric irritability and profound general disturbances. The issue is rapidly fatal. Sometimes the symptoms of general peritonitis, as in the case here reported, are superimposed, and it is probable that many cases are similarly obscured and thus wrongly diagnosed.

Pain, epigastric tenderness, nausea, vomiting, chills, fever and hiccup are the outstanding symptoms. Hiccup was marked in the present case.

The course is usually from one to seven days.

The diagnosis during life is at best a guess. Chvostek is said to have succeeded in making one such diagnosis.

REPORT OF CASE

History.—C. W., man, aged 29, married, colored, laborer, American, applied for treatment at the dispensary, Dec. 19, 1917, complaining of a vague abdominal pain, general in character, intermittent in type, increasing usually after meals, but never severe enough to confine him to bed or to interfere with his appetite. The patient was constipated. There was no history of vomiting, gaseous or sour eructations, or jaundice. Physical examination revealed a slight abdominal tenderness, more marked on the right side, but no masses and no rigidity. Over the aortic area there was a faint systolic murmur transmitted to the carotids, but no other signs of cardiac trouble. The patient was advised to enter the ward for observation, but refused.

December 26, he returned to the dispensary, complaining of the same vague abdominal pain. He was again advised to enter the ward, and the withdrawal of blood for a Wassermann test was suggested, but he refused both.

Present Illness.—On the morning of Jan. 19, 1917, the patient awoke with a headache, and was unable to take his breakfast; this he interpreted as a sign of severe illness. He applied to the dispensary at 9 a. m., and was given half a grain of codein and ordered to bed. At 10 a. m. he vomited and complained of pain in the epigastrium. At 4 p. m. his condition grew worse, the abdominal pain increased, nausea became distressing, and he vomited again. The vomitus was brownish in character, mixed with mucus, but free from blood or pus. Physical examination revealed general abdominal tenderness and rigidity, more pronounced on the right side. There were no signs of free fluid and no obliteration of liver dulness. The facial expression was anxious. The patient had a leukocyte count of 15,000, temperature of 101.6, pulse 100, and respirations 22. A ruptured gastric ulcer was suspected and he was admitted to the male surgical ward of the Englewood Hospital under the writer's care.

The patient slept about seven hours during the night. Next morning he repeatedly vomited green fluid. At 8 a. m. he had a leukocyte count of 27,400; polymorphonuclear neutrophils, 92 per cent.; lymphocytes, 8 per cent.; temperature, 103.2; pulse, 108, and respirations, 24.

He was operated on at 11:30 a. m., by Drs. Bradner and Pitkin. About 2 ounces of serosanguineous fluid were found in the peritoneal cavity. No definite perforation was located. A posterior gastro-enterostomy was impossible on account of excessive thickening of the stomach wall. A gastrostomy was performed, and it was noted that the stomach wall had lost its elasticity and had become so indurated that it was difficult to suture it to the gastrostomy tube. Two cigaret drains were inserted into the peritoneal cavity, and the patient was returned to bed. His general condition was fair, pulse 116, respiration 24. The rectal drip was employed and pituitary solution given.

About 11 p. m. the patient became very restless and thirsty, and complained of pain in the operative area. He also had a hiccup and there was a bloody discharge on his dressing. An irrigation with warm saline through the gastrostomy tube was performed; the return was at first bloody but later became clear. The temperature was up to 104.4, pulse 128, respirations 26. He slept about four hours subsequently.

Next morning, nutritive enemas were started.

In the drainage bottle to which the gastrostomy tube was connected there were 16 ounces of wine colored fluid.

About 8 a. m. the patient's temperature went down to 102, and his pulse to 118, but his respirations were accelerated to 32. At 3 p. m. the abdomen was distended and tympanitic, but there was no evidence of free fluid. He was given an alum enema with good result.

His general condition grew worse, his pulse rose to 138, and became thready, he was given stimulation but did not respond, and he died at 7:50 p. m.

Necropsy.—This was limited to the abdomen. There was about 1 quart of bloody fluid in the general peritoneal cavity. The fluid had apparently oozed through numerous minute perforations in the stomach.

The stomach wall was greatly thickened, measuring from a third to half an inch, and on compression, gastric contents oozed through several pin-point-perforations. These perforations were clearly demonstrated by opening the stomach and holding it up against the light. The gastric mucosa looked and felt leathery and smooth, the rugae having been obliterated. The process was diffuse.

The intestine was distended, and the intestinal wall was slightly congested. The mucous membrane was normal. The mesenteric nodes were enlarged.

The liver was pale and opaque; its substance was soft and mushy, reminding one of the liver in cases of acute yellow atrophy. The splenic tissue appeared normal except for a slight congestion.

The remaining organs were negative.

Numerous microscopic sections of the stomach were prepared in the pathologic laboratories at Bellevue Hospital. They were examined by Dr. Symmers, who found that the mucosa of the stomach was normal except for a superficial necrotic layer. The entire stomach wall beneath the muscularis mucosae was richly infiltrated by polymorphonuclear leukocytes, and was markedly edematous. The blood vessels of this portion of the stomach were deeply injected. Gram-Weigert preparations revealed the presence of innumerable streptococci lying chiefly in the stomach wall immediately under the muscularis mucosae. Microscopic sections from the intestinal tract revealed no pathologic changes.

27 Schermerhorn Street.

THE INCIDENCE OF TYPHOID CARRIERS IN A STATE INSANE ASYLUM*

CHARLES KRUMWIEDE, Jr., M.D.
BRONXVILLE, N. Y.
AND
ELBERT M. SOMERS, M.D.
BROOKLYN

In September and October, 1907, the Brooklyn State Hospital had some cases of typhoid fever. At this time, Drs. Smith and Agnew of this institution sent to Miss W. Carey Noble, of the Bureau of Laboratories, the stools of all the convalescent patients; continued examinations showed that two women (E. O. and A. M.) had become chronic bacillus carriers. In 1912, there were a few cases of typhoid fever, and from these developed another chronic carrier (M. R.). Again, in 1915, a few inmates contracted the disease.

As previous reports have shown the tendency to a high carrier rate in asylums, we thought it worth while because of this history of institutional fever, to cooperate in a survey to determine the incidence of typhoid carriers. Under the direction of one of us, the institution was listed by wards, and ward residence since 1907 indicated for each inmate. Our intention was to include only the resident population at the time these lists were compiled. Specimens of feces were collected and brought to the laboratory as soon as possible after evacuation, and were there examined for the *Bacillus typhosus*. All the inmates in the female wards have been examined, yielding the following results:

Wards 1 and 2, population (February, 1916), 91: No cases of typhoid developed in this ward. One resident had typhoid in Ward 9 in 1907. No carriers were found.

Wards 3 and 4, population (March, 1916), 65: There were two cases of typhoid in this ward in 1907, and both the patients became carriers (E. O. and A. M.). Two additional carriers (M. C. and H. G.) were found, both without a history of typhoid. M. R., a chronic carrier, who developed typhoid in Ward 9 in 1912, was transferred to this ward later in the same year, and died here in September, 1915.

Ward 5, population (April, 1916), 80: One case of typhoid developed in 1907. Another patient had typhoid in Ward 9 in 1912. No carriers were found.

Ward 6, population (April, 1916), 132: No cases of typhoid developed in this ward. No carriers were found.

Ward 8, population (April, 1916), 72: No cases of typhoid developed in this ward. Three residents gave histories of typhoid, two before admission to the hospital, one in 1907 in Ward 9. Examinations were negative. Two carriers (J. M. and M. W.) were found, both without a history of typhoid. M. W. died in February, 1916. The changes in ward residence of these carriers and of other carriers, then unrecognized, may have led to contact infection and the development of the carrier state, without recognizable symptoms of typhoid infection.

Ward 9, population (May, 1916), 76: Eight cases of typhoid have developed in this ward: two in 1907, four in 1912, and two in 1915. (Three of these persons are now residents in other wards, and noted there.) One 1912 patient (M. R.) became a chronic carrier and was transferred to Ward 3 (which see). Examinations of the four residents were negative. One typhoid carrier was found (M. B.) who denies a history of typhoid fever.

It will be seen from this summary that, in a total population of 516 female patients, the survey yielded five chronic carriers, in addition to three previously known. Of the last, all continued to excrete bacilli after having had typhoid fever, two in 1907 and one in 1912. Of the other five, none gives a history of typhoid fever. Too much reliance cannot be placed on negative histories of typhoid fever, especially from patients of this type, as the symptoms of a mild infection may have been overlooked.

In spite of this, however, we believe that it is not an unreasonable assumption that some of these patients coming in contact with cases or carriers ingested the bacilli, became normal or contact carriers, and later developed into chronic carriers. That is, their natural immunity prevented the development of a generalized disease; but in spite of this resistance, the bacilli multiplying in the intestine, small numbers may have invaded the body proper and through the lymphatic and vascular systems may have reached the liver and gallbladder, where they localized and gave rise to chronic inflammation. After their localization in the biliary passages, a chronic carrier state would be likely to result.

The striking thing in this investigation is the large number of carriers, eight among 516 persons, or 15.5 per thousand. This rate is higher than usually encountered in institutions and much higher than among the general population. The unusually high incidence is shown by applying the rate to the female population of New York State over 25 years of age. This would give the extraordinary result of 45,000 carriers.

In view of these results as well as because of the frequency of institutional typhoid fever, we do not believe that any one would question the advisability of vaccination of all inmates of insane asylums. Unfortunately, however, this procedure is left to the discretion of the institutional authorities and is not carried out as generally as it should be.

A considerable amount of institutional typhoid fever due to the failure to vaccinate has come to our notice during the last few years. Because of this, we feel that vaccination should be mandatory not only in asylums but also in all custodial institutions, and a regulation to this effect should be added to the sanitary codes of all health departments.

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*From the Bureau of Laboratories, Department of Health, New York City, and the Brooklyn State Hospital.

Military Medicine and Surgery

THE EFFORT SYNDROME

TOGETHER WITH A CONSIDERATION OF THE SIGNIFICANCE OF CERTAIN MURMURS *

ALFRED E. COHN, M.D. (New York)
Major, M. R. C., U. S. Army; Senior Consultant in General Medicine, A. E. F.
FRANCE

The war has altered opinion of the value of many signs formerly accepted as important indications of the presence of organic heart disease. The chief sign involved in the changed point of view is the systolic murmur. The significance attached to diastolic murmurs, both the diastolic murmur of aortic insufficiency and the presystolic murmur (auriculosystolic) of mitral stenosis, has remained unaltered. Persons affected with these two diseases have been found not to bear the strain of war satisfactorily, even if at the time of enlistment they were free of any indication of heart failure. They are now, accordingly, rejected for service.

The significance of systolic murmurs, especially their relation to mitral insufficiency, however, has occasioned much discussion. Systolic murmurs occur in so large a number of persons that it has become necessary to decide when they are important and denote mitral insufficiency. The need for making the distinction between important and unimportant systolic murmurs occurred infrequently in civil life. Young men rarely sought medical advice on account of such murmurs. When they did, as the result of life insurance or other accidental examination, the difficulty in diagnosis was appreciated, but reliable guides for making a decision were wanting. Early in the war, men with such murmurs were accepted, and many were found after severe service to bear satisfactorily the fatigue incident to campaigning. The conclusion was therefore drawn that the murmur in itself must in these instances be considered unimportant. New criteria were accordingly required to decide which systolic murmurs were important and which types were not.

CLASSIFICATION OF SYSTOLIC MURMURS

Until now, it has been customary to divide murmurs into two groups, functional and organic. To decide in which group a murmur belonged, it was studied from the point of view of the bearing on it of the posture of the body, of the position in the precordial area at which the murmur was best heard, of its character on auscultation, according to its intensity in different respiratory phases, according to the direction of its transmission, and according to its time incidence in the cardiac cycle.

A word should first be said on the use of the words "functional" and "organic" in relation to murmurs. A murmur is, of course, a physical phenomenon and is dependent on the structure of the containing vessels and the arrangement of the surrounding tissues for its production and character. This is true of the so-called functional murmur as well as of the organic variety. All murmurs are in this sense organic. The distinction that the words "functional" and "organic" were intended to convey relates to their importance or unimportance, or perhaps better to their significance or insignificance. The point is in itself not important except in the interest of clear understanding.

Close study has failed to show that systolic murmurs may be classified as significant or insignificant according to the criteria just enumerated, that is to say, posture, position, character, respiratory emphasis, transmission, and position in the cardiac cycle. It is, of course, true that aid may be obtained from certain of these criteria; but the aid is not definitive. Other criteria have therefore been proposed. These relate (1) to the size of the heart; (2) to the history of infection, especially of rheumatism; (3) to the intensity of the second sound in the second left interspace or third left costochondral junction, and (4) to the reaction to exertion. A candidate may be accepted for service in the Army if his heart is normal in size, if there has been no history of rheumatism, if the second cardiac sound is not accentuated, and if the response to a standard exercise test is normal, even though a systolic murmur is present. The terms used require explanation.

The heart is normal in size in adult males in civil life in the third decade, when in the oblique position it measures from 9 to 11 cm. In active military service the size often increases to from 11 to 13 cm., and these dimensions are considered normal. The measurements given are based on roentgenograms placed when exposed 2 meters from the target of the roentgen-ray tube. Attention must be called in this connection to the fact that not all normal hearts lie in this oblique position in the chest. Frequently their outline shows them to have a more vertical position in the midthoracic region. Sometimes they have a more nearly transverse position. These variations naturally make the diagnosis of hypertrophy difficult and must be taken into consideration in deciding on its presence. A hypertrophied vertical heart may in profile be smaller than a normal transverse organ. In every instance, therefore, a correct estimate of size may not be possible.

The second criterion mentioned is the history of infection, and especially rheumatism. Under rheumatism are included acute rheumatic fever, chorea, torticollis, tonsillitis and growing pains. It is obvious that a single attack of acute rheumatic fever occurring in childhood, and being followed by no obvious cardiac disability, is not as important as repeated attacks, the last of which has occurred within the year.

The third criterion relates to the intensity of the second sound. It is not possible to state that the second sound is invariably accentuated when chronic mitral endocarditis has persisted for a prolonged period, but it is believed to be the rule that after long-standing disease an accentuation takes place. Its presence is therefore of significance in deciding that disqualifying disease has occurred.

The nature of the response to a standard exercise test is the fourth criterion. The introduction of the test is important, for it gives information of what one desires to know as the result of examination, that is to say, the ability to undergo exertion. The test recommended in Circular 21, of the Surgeon-General's Office, consists in hopping 100 times on the left foot so that the shoulder is elevated from 4 to 6 inches. Two minutes after the end of this exercise, the ventricular rate should return to approximately within ten beats of normal and the blood pressure to normal. The

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* Lecture delivered at the Army Sanitary School, A. E. F., April 29, 1918.

measurements are made with the patient in a recumbent position. The test is recommended because it is simple and can be carried out in a uniform manner.

It is not pretended that one can rely on these criteria always to solve a difficulty in diagnosis when a systolic murmur is present. But they are useful when, in addition to the murmur, the heart is barely enlarged and a history of repeated and recent attacks of rheumatic fever is reported.

A word should be said about the character of the apex impulse. It has been the habit to lay stress on its extent and position and on the force or other slight abnormalities presented by it on palpitation. Recently abundant experience has tended to confirm the impression that too much stress is laid on these phenomena. But as an indication of the position of the left border of the area of cardiac dulness, in estimating hypertrophy, the location of the apex, especially its farthermost extension to the left, is valuable.

EFFORT SYNDROME

These views as to the systolic murmur represent the chief alteration that has been made in the point of view of organic heart disease. Of far greater importance is a syndrome, functional in nature and, although not confined to soldiers, especially common in war. It is a group of symptoms, referred by soldiers to the cardiovascular system, and forming a frequent cause of more or less serious disability. This group of symptoms was first described as a clinical entity during the Civil War in the United States by Hartshorne, and the description was later elaborated in greater detail by DaCosta. By the latter it was called the "irritable heart of soldiers," and the disorder was known by this name until the present war.

The reason for its occurrence was sought in our own and other armies. Its cause was laid first to one and then to another circumstance. It was found everywhere and under all conditions. During the present war, attention was forcibly directed to the affection because of the large numbers of soldiers whom it involved. With the new work on the subject, the name of Thomas Lewis is closely connected. His recommendation that the affection be known by the term "effort syndrome" has fortunately been accepted in the American Expeditionary Forces. It is classed in the British service as disordered action of the heart (D. A. H.).

The affection is characterized principally by the occurrence of breathlessness, giddiness, a sense of fatigue, pain in the chest, often in the region of the precordium, and palpitation. On examination are found, in addition, an anxious facies, tremor or shakiness of the fingers alone or of the extremities or even of the whole trunk, cyanosis, sweating, skin hypersensitiveness, both hyperesthesia and hypesthesia (Head zones), and tachycardia; and on questioning, one learns besides of headache and of unpleasant dreams at night. Many of the symptoms suggest the presence of the heart failure of chronic valvular disease. It will be seen, however, that this affection is strikingly different. It need scarcely be pointed out that the two conditions may coexist.

Naturally, not all these symptoms are necessarily present in the same patients, and besides the individual symptoms vary in the degree of severity. Indeed, the clinical picture varies within wide limits. In consequence, experience is required in order to recognize the cases, especially in the milder forms. Patients may, in fact, complain of a single symptom only. The most frequent of them, according to Hume, is pain in the chest, occurring in 768 out of 1,000 cases. Breathlessness comes next (675), then giddiness (403), palpitation (354), precordial tenderness (268), fainting with loss of consciousness (98), and fainting without loss of consciousness (25). As a matter of fact, it happens frequently that a single one of these complaints causes the soldier to report at sick call. But in addition to his complaint, if we suppose it to be precordial pain, he is likely to look worried, his face to look drawn, his brow contracted, his eyes unduly anxious, his hands and fingers ashake. Questioning may elicit the fact that he suffers from headache, bad dreams at night, pain of a fugitive nature elsewhere in the body, and an increasing disability to work. Examination discloses the presence of certain physical signs, to be discussed later. While the clinical picture that has just been drawn is common, the especial cause for sick report may be one of the other chief symptoms.

Indeed, any one of the chief complaints enumerated may appear alone and dominate the clinical picture. Experience must teach the large variety of combinations in which the chief symptoms occur. The peculiarities they present deserve detailed consideration.

The pain is usually located in the precordium or just above and to the left of it. Its position is not necessarily fixed; it may change from day to day. It may be felt on the right side of the chest, in the flanks or elsewhere. Sometimes, though, it is referred to the shoulders and arms. When the pain is in the chest, its character is usually sharp, sticking and fleeting, rarely constricting. It is probably not experienced at night and it does not keep the patient awake. Effort tends to bring it on, just as it tends to bring on the other symptoms. Associated with the pain, areas of skin hyperesthesia (Head zones) are found in from a quarter to one half of the cases. The intensity of this symptom varies. Patients may complain of it as due to the pressure of clothing. In other instances, its presence is elicited on examination. Pressure between the fingers of the pectoral, deltoid and sternomastoid muscles may elicit unilateral or bilateral tenderness. Boas[1] has in a similar manner found areas of hyperesthesia. The frequency with which this occurs is not known.

Breathlessness is likewise a common complaint and often the sole one. It interferes altogether with the normal performance of duty, such as a route march. It may be impossible objectively to detect the symptom, but not infrequently the distress is obvious. The rate of the respiration may be much elevated, especially as the result of effort. Frequencies of 60 and 80 per minute have been described. The relief from effort and the recumbent position are usually followed by the return of breathing to normal. But dyspnea, even when the degree is very striking, does not require the patient to be propped up in the way that heart disease does. Patients sleep quite flat or on one pillow, and the rate of breathing is normal. Cough and expectoration are not prominent.

There is, however, one type of case in which difficult breathing comes on, especially at night, in the form of attacks of nocturnal asthma. Such attacks are probably limited to those cases of the effort syndrome in which the patients have in addition been gassed. They are manifestations of gas poisoning rather than of the effort syndrome. They come on rather late (in from four to six weeks) after the gas attack. It is a form of respiratory distress that requires special mention under treatment.

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[1] Boas: Personal communication to the author.

In connection with breathlessness are often combined the sensations of extreme fatigue or lassitude and giddiness. The sense of fatigue alone may be so great as to be incapacitating. Walking on a level for 100 yards may suffice to engage all the patient's effort. Carrying light equipment, or using a shovel or rake may be quite beyond his strength. Muscular tone may be low. The patient is then unable to resist the examiner's effort to extend the arm when he has previously been directed to hold it flexed. The muscular weakness may, indeed, be general.

Giddiness is a very common complaint. It is a type in which objects external to the patient apparently do not tend to circulate about him. It is expressed rather as a desire on his part to steady himself against the impulse to fall. Black spots and other abnormal visual phenomena, common in the vertigo of hypersensitive circulatory diseases or in chronic nephritis, are not prominent complaints.

Attacks of fainting occur in a moderate number of men. Sometimes consciousness is retained, but more often it is lost. Care must be taken in distinguishing this condition from true epilepsy.

Cardiac palpitation is a common symptom. It may accompany elevation of the pulse rate, but it need not do so. It may persist during rest.

Examination of the patient brings out a number of signs in addition to those to which the patient has attracted attention. Prominent among these are tremor, sweating and tachycardia. The tremor is coarse and is a shake rather than a tremor. It involves not only the fingers and hands but occasionally all the extremities and the head and the entire trunk as well. Patients who have it in a marked degree, and have the anxious facies as well, present a distressing picture. But the importance of the tremor, striking sign that it is, is easily exaggerated. Examples of it are widely distributed. It may occur in men who give no evidence of suffering from the effort syndrome. It is found, in fact, in great numbers of men who have never been away from a base port. On the other hand, it is entirely absent in equally large numbers of men who have served fairly long periods in the trenches and have sustained wounds. When it is associated with the effort syndrome, its prominence overshadows the picture; but in spite of that, it has not for the reasons given been found valuable as a guide in diagnosis or as an index of progress in treatment.

Profuse sweating is common, even when the weather forms no adequate reason for it. Sweat may stand on the face and drop from the axillae. There are other evidence of hyperactivity of the skin, such as the occurrence of wheals on stroking. The occurrence of Head zones, both of hyperesthesia and hypesthesia, has already been mentioned.

Of especial interest is the examination of the heart, to which most of the symptoms, such as pain, breathlessness, tachycardia, and fatigue, are naturally referred. The pulsation of the precordium is often striking, and may extend as a wavelike motion over two or three intercostal spaces. The thrust forward of the apex impulse may be especially forcible; in fact, it is often felt to be so. A thrill is not felt, but very frequently the impulse is not the simple, single thrust normally experienced, but rather is split, giving the impression of a major thrust split into a succession of ill defined minor parts. One is reminded of the thrill in presystole of mitral stenosis. But the thrill in mitral stenosis differs distinctly from this, especially in the matter of its timing. This thrill, due no doubt to overaction, occurs distinctly in systole, at the time of the first sound. A single sharp shock, synchronous with the second sound, is also often felt both at the apex and at the base. In size the heart is not enlarged. Indeed, measurement[2] made from teleroentgenograms shows that it tends to be smaller than normal rather than larger. An exact statement of size is, however, difficult to give. Normal size depends on the nature of the patient's activity. It is generally admitted that in the soldier on active field duty, the average size is usually greater by 2 cm. than was his heart before enlistment. Estimates of size should take this fact into consideration. The expected total transverse measurement may be given as between 11 and 13 cm. It is doubtful whether in the effort syndrome cases, when these facts are taken into account, enlargement occurs. The precautions already urged in estimating the size of the heart apply, of course, equally here. On auscultation, much difficulty has been experienced in distinguishing what one hears from the signs of mitral stenosis. The first sound is often unclean. As one might have expected on palpation, it has a serrated quality, the serrations being equal, confined within the limits of the first sound and replacing it. But it is precisely these serrations that cause confusion with the presystolic murmur of mitral stenosis. It need not be pointed out that serrations in the first sound are not the same as the crescendo murmur before that sound.[3] When the rate of the heart is elevated, as is often the case, the difficulty of accurate auscultation is naturally increased. Usually the second sound is not accentuated either at the apex or in the base areas. The absence of accentuation is a sign of value; for although it cannot be said always to be true that when the mitral stenosis is actually present, the second sound is accentuated, this, nevertheless, is generally the fact. The liability to confusion is emphasized because the error in diagnosis has frequently been made and has wrought harm not only to the service but also to diagnostic standards. Occasionally the diagnosis of mitral stenosis is made because in recent years students and physicians have been urged not to fail to make this diagnosis, even if the rumbling presystolic murmur is absent. They have been told that a snapping first sound suffices to establish the presence of the disease. The warning is proper, but insistence ought also to be laid on the fact that later an accentuated second sound should be looked for and found present. It is not contended that the diagnosis of mitral stenosis cannot or should not be made unless the characteristic murmur is present. In fact, the murmur is not always present. But insistence should also be laid on the fact that the diagnosis should be made after due attention has been given to the history of the patient and to exact auscultation. Anxiety to avoid one error has led many into making the other.

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[2] Medical Research Committee, Special Report Series, No. 8.

[3] It is appreciated that insistance on the crescendo *character* is not quite proper, for, as Gerhardt has pointed out, the crescendo character of the murmur is *not a property of* its own, but is lent to it, because it terminates, when the P R time is normal, in a sharp first sound.

On occasion it is a difficult matter, even after all precautions have been taken, to be certain that a presystolic murmur is present. Various maneuvers have before now been recommended to make it evident, such as altering the posture of the patient, holding the breath, and undertaking exercise. Morison and Lewis[4] have recently hit on another method, which they say is effective in certain instances. They lay the patient in the recumbent posture and place the bell of the stethoscope at the site at which it is anticipated a presystolic murmur may be heard. The patient then inhales 3 minims of amyl nitrite. During the first ten or twenty beats, the only change is an acceleration in rate; during the second ten or twenty beats, the anticipated murmur may appear; during the third ten or twenty beats, the murmur usually disappears. The duration of the test is short. Auscultation must be practiced continuously throughout its performance.

The effort syndrome is not associated with a disturbance in the rhythm of the heart. Regularity, except for sinus arrhythmia, which is a normal phenomenon, is maintained. Although the affection does not involve a disordered action of the heart (D. A. H.), irregularities may naturally be found, as they are found accidentally in any large group in the community; but they are not a factor in the syndrome.

RANGE OF HEART BEAT

Pulse Rates	Per Cent.	
From 40 to 50	0.1	
From 50 to 60	0.5	
From 60 to 70	1.8	
From 70 to 80	8.5	
From 80 to 90	13.5	
From 90 to 100	22.4	46.2
From 100 to 110	23.8	
From 110 to 120	14.7	26.0
From 120 to 130	11.3	
From 130 to 140	1.4	
From 140 to 150	0.9	
From 150 to 160	0.1	

The rate of the heart beat is usually accelerated. The range, as shown by the accompanying table, is between 90 and 110 in 46.2 per cent., and between 110 and 130 in 26.0 per cent. of the cases, or between 90 and 130 in 72.2 per cent. of the cases. These figures are taken from Hume. There need be no elevation, as the table shows. It is, perhaps, important to point out that the rate tends to become unstable. In the same patient, it may on the same or on successive days fluctuate between wide limits. Sometimes, of course, stability at one or another level may be maintained. The fact of instability is mentioned especially because of the tendency to use cardiac rate in estimating prognosis.

ETIOLOGY

The significance of the affection we are considering has been the subject of a great deal of speculation. Certain suppositions in regard to its cause may be dismissed immediately; the importance of others must be weighed. First may be dismissed the thought that there are racial predispositions toward its occurrence. During the war, cases have been found in all the armies, Central as well as Allies. And among the Allies it is found among Hindustani, Scotch, Irish, Welsh, Canadians, Australians and New Zealanders. No race domiciled in the United States is free. It is found in nonsmoking peoples, like East Indians, as well as in smokers. It cannot, however, be said that smoking is harmless, so far as aggravating the condition is concerned. Investigation has not shown that it is dependent on a specific infecting organism, nor is it always associated with the occurrence of trench fever or rheumatism. Many who have had both diseases have not become subject to the effort syndrome. The liability, however, of men who have suffered from infectious diseases and especially from trench fever to suffer from the effort syndrome should not be overlooked. A point of especial importance relates to the tendency of trench fever to recur. Attacks are known to come on after afebrile intervals. These recurrences must be taken to indicate the possibility of residual infection. In view of the fact that on occasion tachycardia and its attendant symptoms are alone manifest, the infection itself may be regarded as involving the heart. It will be recalled that the occurrences exactly similar are encountered in convalescence from typhoid fever, dysentery and influenza. The relation of the effort syndrome to acidosis is too vague for us to attach importance to the few uncertain experiments that have been reported. By the method of respiratory analysis, Wilson and Levine[5] failed to find that a deviation from the normal exists.

Of more importance is the possibility of the disturbance of thyroid secretion. Symptoms associated with exophthalmic goiter are in some respects like those found in the effort syndrome. The symptoms in common are nervousness, tremor and tachycardia. In the effort syndrome, exophthalmos or thyroid enlargement is usually absent. There need be no diarrhea. Tachycardia may be absent. The tremor is really no tremor, but a shake, and it attains degrees of severity never seen in the most advanced cases of exophthalmic goiter. On the other hand, when tachycardia in exophthalmic goiter develops to as high a rate as is attained in the effort syndrome, there is usually a certain degree of dyspnea as well, and the size of the heart is definitely increased, whereas there is no reason for believing that this occurs in the effort syndrome. Between the conditions, a striking difference is observed at night. When tachycardia and dyspnea in exophthalmic goiter are sufficiently severe to attract attention, they persist, as a rule. In the effort syndrome, on the other hand, both disappear. The presence of small thyroid tumors or slight symmetrical enlargement of the gland can scarcely be taken as evidence in favor of hyperthyroidism. Such enlargements occur in large numbers of persons in certain sections of the United States, as elsewhere. They are not necessarily accompanied by symptoms either of developing exophthalmic goiter or of the effort syndrome.

The fact is appreciated that in the minor grades of both conditions the symptoms may be vaguely defined and might easily be confused. Investigations should be instituted with the view of developing specific methods of diagnosis in the early stages. Such studies should yield important results for diagnosis and consequently for treatment. In the later stages, when the cardinal symptoms of both are well established, no difficulty exists. For the present, reliance in diagnosis must be placed on the symptoms and signs already described.

A word should be said about those cases of the effort syndrome that occur after gassing. Confusion has occurred in relation to them. Many gassed patients have the symptoms of the effort syndrome; many, however, have not. But both groups develop the symptoms of nocturnal asthma, to which reference has already been made. They have been found to have polycythemia as well. Barcroft and Haldane and Meakins deserve credit for having called attention to this group of patients. Both symptoms, asthma and polycythemia, are properly ascribed to a late stage of gassing. They may, of course, occur in individuals who have also the symptoms of the effort syndrome. But it must be clearly understood that such patients are sufferers from two complaints, late gassing and the effort syndrome. The two are not necessarily associated.

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[4] Morison and Lewis: Personal communication to the author.

[5] Wilson and Levine: Personal communication to the author.

RELATION TO WAR PSYCHONEUROSES

The most difficult part of the subject to discuss is its relation to the war psychoneuroses. In their pronounced forms, these naturally present no difficulty in diagnosis. Neither do the effort syndrome cases without psychoneurotic symptoms cause difficulty. But there are cases in large numbers that exhibit symptoms belonging to both groups. These cases present a twofold problem, one in classification or diagnosis, the other in therapy. The difficulty in diagnosis lies at the very root of the problem. There is no disposition to add new elements of confusion to the subject, but another attitude toward the subject must be suggested. It is a fact that many effort syndrome cases have not arisen de novo as the result of the war. The taking of proper histories brings out the fact that the beginning of the affection is of long standing. The complaints were initially too insignificant and too little insistent to require serious attention. During military service, however, the civil factors of safety fail to suffice for the individual's protection, the defect becomes prominent and the patient suffers. The important point is that the affection is of long standing but latent. It requires a stimulus, like the stress of war, to make the trouble patent. The stimulus becomes operative in a manner already habitual to the individual. The reaction is cardiovascular.

Those classed as psychoneurotics have a similar history. The stimulus that drives their latent defects into consciousness is the same. They differ in that their previous histories and their personal psychology predispose them to a different reaction. The manifestations of their affection lie in the domain of neuropsychiatry and require no detailed description here.

There is another group of more complex nature, the individuals in which react to the stimuli of war by more manifestations, and more varied ones, partly psychoneurotic, partly cardiovascular. In the same way, reactions may be found which are, for instance, gastro-intestinal or muscular. In all these varieties the stimuli furnished by the war may be similar. The reaction is a matter partly of chance, partly of predisposition.

TREATMENT

Lewis has offered a most important contribution to the methods for managing the malady, especially from the military point of view. For this purpose there was required a technic for sorting men in grades for service. He concluded that the proper way of sorting men for physical exertion was to try out the men by physical tests. It was an obvious conclusion. Lewis succeeded in doing this by a system of graded exercises. The system works admirably, as is seen by the fact that in a certain group after eleven months of service, the classification then made proved to be substantially correct. But the limitations under which work was done at the British Military Heart Hospital no doubt prevented the introduction of additions in treatment, which a consideration of the affection indicates are obviously desirable.

The variety of origin of the cases must be remembered, in arranging for their management. Some of the patients are convalescents from acute infections, especially trench fever, bronchitis and pneumonia. The management of convalescence after these infections must be designed to safeguard patients from damage dependent on the relighting of their infection. Relapse after trench fever is known to occur with moderate frequency and should be promptly recognized. When it occurs, it is thought to depend on an involvement of the heart muscle. In such circumstances, physical exertion is naturally not indicated. Other cases are of men who have been gassed. Others have been of long standing and existed before the war. Still others have obviously shown no predisposition to the affection before the war. In any case, the principles of treatment are the same. The general rules of hygiene must, of course, be observed. The men should be made to understand that they are not ill. They should not, therefore, be collected in hospitals. In hospitals, moreover, the constant contact with disease and the suggestions arising from this contact are undesirable but unavoidable. The proper environment for them is supplied by camps under suitable medicomilitary discipline. It is necessary to insist on the medical rather than the military side of the management, although there should be no underestimation of the importance of military discipline. The discipline must be rigid, but appropriate to the degree of disability of the men. Occupation must be found for them, and especially occupation for their minds. It is an error to permit them to rely on their own resources alone. When this side of their treatment is neglected, they speedily become bored, listless and undisciplined. They begin to brood on their disability until their mental background, deranged in the first instance, is worse in the last state than in the first.

In practice, attention should be given to the minor sources of infection, such as infection of the accessory nasal sinuses, the teeth, tonsils and ears. These infections should be removed.

Physical exercises should be arranged for the patients. Three methods are suggested: drill, farm or garden work, and games. The drill should be graded according to the ability of the patient to perform it. It may be varied both as to severity and as to duration. At best, however, drill may occupy only a small portion of the day and may be supplemented by route marches. Farm and garden work may, of course, also be adapted to the capacity for endurance of the individual for work of this kind. It has the advantage of variety and may be performed without that nervous strain which the sharp orders given at drill by the drill sergeant necessarily entails. The introduction of games invites men unconsciously to undertake a great deal of physical exercise without that feeling of compulsion which attaches to the other forms of exercise. Their number may be added to and varied by the imagination of the medical officers. To the forms of exercise may be added, if the facilities are presented, training in occupations of use in the Army. Advice as to these must be sought from time to time. Men are constantly wanted as stenographers, typists, telegraphers, mechanics in gun, automobile or wagon repairing, railway attendants, and hospital orderlies.

The mention of disturbance in mental background leads naturally to a consideration of the share neuropsychiatrists must have in the treatment of certain of the cases. In point of fact, even when the symptoms are predominantly cardiovascular, the neuropathic side of the picture is frequently prominently developed. The importance of this side of the therapeutic problem, if neglected, may actually increase during the period of treatment. The requirements for aid in this direction vary. The difficulties may be mimetic or inherent in the individuals. And again some men, reticent by nature, in the attempt to suppress interest in their symptoms are troubled by dreams of an uncomfortable kind.

CONCLUSION

It has been my purpose to indicate the general features of this affection of soldiers. The attempt has been made to show how involved the syndrome is, and how it touches intimately other domains in medicine aside from the cardiovascular. Its etiology cannot now be conscientiously indicated, nor its exact relation to the numerous processes involved, which are familiar and the connections of which with this entity immediately suggest themselves. It is impossible to lay down rigid laws for treatment; that may be done only when the exact pathologic physiology is established. But suggestions are made for dealing with the problem not only for the purpose of sorting, which is purely military, but also for the purpose of therapeutic improvement, which is the aim of clinical medicine.

ISOLATION OF INFLUENZA BACILLUS FROM THE BLOOD

REPORT OF TWO CASES

J. S. FLEMING, M.D. (Memphis, Tenn.)
First Lieutenant, M. C., U. S. Army; Chief of the Laboratory Service, Base Hospital No. 106, A. E. F.
FRANCE

Case 1.—*Clinical History.*—The patient was admitted to the hospital, Sept. 27, 1918, two days after the onset of influenza with headache and aching all over. The patient had a cough, but no bloody sputum. The bowels had not moved for two days. The throat was very red. There were a few sibilant râles in the right axilla and anteriorly.

September 29, the temperature was elevated, the pulse rapid, and the entire chest full of large, moist râles. The condition was diagnosed as bronchopneumonia.

September 30, the patient was very much prostrated, the skin dry and harsh. Respiration was markedly increased with almost complete absence of breath sounds over the right middle and lower lobes. There was increased voice fremitus. There was flatness on percussion. There were no râles. The diagnosis was lobar pneumonia.

October 1, the pulse was 124 and rather weak; there was marked elevation of temperature. The right base posteriorly seemed slightly dull and changed in voice sounds. There was no bronchial breathing. The neck was not stiff. The diagnosis was changed to bronchopneumonia, and the subsequent trend of events proved this to be correct.

October 2, the face was flushed, the ears cyanotic, the tongue coated, the pharynx inflamed, and there was dulness at the left base. There were areas of bronchial breathing and also left axillary râles. There were areas of dulness over the right base posteriorly.

October 3, the patient was somewhat cyanotic. Breathing was rapid, and there was impaired resonance over the entire right side, especially the base. There were many râles over both bases, especially the left. The patient's condition was very serious.

October 4, the patient was very cyanotic, the pulse weak and rapid, and the condition serious. The right base posteriorly was dull on percussion, with crepitant râles and distressed breathing.

October 5, there were dulness and râles over both bases. The patient was cyanotic. The pulse was weak.

October 7, both lower lobes showed scattered areas of bronchovesicular breathing.

October 8, the patient appeared slightly improved. There were still many râles throughout the chest. Voice, especially at the base, was very weak. The heart was of fair quality. There was no rigidity of the neck. The pupils were equal. Later the pulse was rapid, the respiration labored, and the patient very weak and cyanotic. Still later, the patient was comatose, very weak and cyanotic. Breathing was rapid and shallow. The pulse was weak. Finally, the patient was profoundly toxic, and too ill to examine.

October 9, the patient died at 2:05 a. m.

Laboratory Diagnosis.—A blood culture was taken, October 9. Ten c.c. of blood were introduced into a bottle containing 150 c.c. of a 1 per cent. glucose broth. The reaction was 0.3 plus. This was incubated at 37 C. Transfers from a twenty-four hour culture were negative. Transfers from a forty-eight hour culture showed a very fine, sparse growth practically unnoticeable unless examined with a hand lens. Morphologically these colonies resembled the influenza bacillus. Smear showed minute gram-negative diplobacilli with all the general appearances of influenza bacilli. Five-tenths c.c. of broth from the seventy-two hour culture was then injected into the peritoneal cavity of a white mouse. The following morning the peritoneal exudate showed large numbers of characteristic gram-negative bacilli, which on transfer gave a typical growth on blood agar plates but failed to grow on blood-free mediums. A mouse died in forty-eight hours. The same organisms were still present in the peritoneal cavity. The heart's blood failed to show growth.

Case 2.—*Clinical History.*—The patient, admitted to the hospital, Sept. 26, 1918, had been taken ill the day before with cough, headache, backache and pains all over the body, and fever. He had fainted twice.

September 30, there was dulness in the right lower lobe anteriorly on percussion. There were many small, moist râles. No change in voice or respiration was noted. Fremitus was present. The condition was diagnosed as possibly bronchopneumonia.

October 1, there was dulness over the entire right lower lobe. There were many small, moist râles on coughing, and musical, moist râles over the entire right lower lobe. There was fremitus in both lower lobes. The condition was slightly worse than on the preceding day.

October 5, the patient was in a profuse perspiration. There was dulness in the left upper lobe and in the right lower lobe, with signs of consolidation. There were a few moist râles in the other lobes.

October 8, the patient's general condition was somewhat improved. In the afternoon there were some signs of pleurisy.

October 9, the temperature was elevated. The patient still complained of pain in both lower parts of the chest. There was no change in percussion. Friction rub and dry râles were noted especially in the left upper lobe. There was no cyanosis. Cerebrospinal symptoms were absent. The reflexes were normal.

October 10, in the morning, there was no dulness nor change in voice or breathing. There were dry, musical, and large, moist râles throughout both sides of the chest. There were no signs of fluid. In the afternoon the temperature, pulse and respiration were higher. There was no endocardial trouble.

October 11, the patient's condition was not so good. There were general mixed râles throughout the chest.

October 12, there were dry, moist and musical râles of all sizes throughout both sides of the chest, especially in the lower lobes. There were no areas of consolidation. The general condition was very good.

I was unable to complete this history.

Laboratory Diagnosis.—Blood culture was taken, October 10. The same procedure was followed as in the previous case, with practically identical results except that the mouse had not died up to the date of my departure.

COMMENT

These two blood cultures were not taken with any hope of finding the influenza bacillus, but were secured from severely ill patients with the probability of finding the more ordinary bacteria usually associated with respiratory infections. Reasoning on that basis, the logical assumption would be that it is possible to isolate the influenza bacillus from the blood in a sufficient number of clinically influenza cases to prove undoubtedly the etiology of the prevailing epidemic of so-called "Spanish influenza."

Owing to my transfer from Camp Jackson, I am unable to undertake this, but the foregoing short and incomplete report may be interesting to others.

On approximately 100 throat cultures taken for meningitis, the number of plates showing the presence (macroscopically) of influenza colonies has been striking, especially to me after having examined thousands of plates last winter, when its presence did not seem common.

PANDEMIC "INFLUENZA" AND SECONDARY PNEUMONIA AT CAMP FREMONT, CALIF.

WALTER V. BREM, M.D. (Los Angeles)
Major, M. C., U. S. Army; Chief of the Medical Service

GEORGE E. BOLLING (Brockton, Mass.)
Captain, S. C., U. S. Army; Chief of the Laboratory

AND

ERVIN J. CASPER, M.D. (San Francisco)
First Lieutenant, M. C., U. S. Army

CAMP FREMONT, PALO ALTO, CALIF.

The expected storm of the prevailing pandemic infection broke suddenly on the Eighth Division, U. S. Army, Camp Fremont, Calif., Oct. 8, 1918, and during the next six weeks, 2,418 patients suffering from respiratory diseases were admitted to the base hospital. In addition, many soldiers having more or less mild infections were cared for in the various camp infirmaries in order to avoid overcrowding in the base hospital. Altogether there were, at a conservative estimate, 3,000 cases.

Pneumonia was diagnosed in 408 cases, an incidence of nearly 14 per cent. We know now, however, that there were many cases of pneumonia that were diagnosed as bronchitis, and that the true incidence of pneumonia was greater than that indicated.

Of the 408 patients with pneumonia diagnosed, 147 died, a mortality of 36 per cent. for the pneumonia series and about 5 per cent. for the epidemic. No deaths occurred without a complication of either lobar pneumonia or bronchopneumonia, an observation in accord with that of Christian.[1]

CLINICAL FEATURES

As one reflects on the clinical features of the epidemic, one finds oneself impressed by certain striking and characteristic phenomena:

1. *Hemorrhage.*—Epistaxis was a common feature throughout. At first we looked on it as merely an incidental occurrence, as in typhoid fever, and not as possessing special significance. Instances of epistaxis multiplied, however, and often blood was seen to gush from a patient's nose and mouth. When pneumonia appeared, the patients often spat quantities of almost pure blood. Female patients, of whom there were altogether about 100, had a hemorrhagic vaginal discharge, which at first was thought to be coincident menstruation, but later was interpreted as hemorrhage from the uterine mucosa. Finally, the extraordinary hemorrhagic picture seen at necropsy, together with the constant leukopenia in the initial stages, completed the evidence that led us to believe that an important feature of the disease is some kind of blood dyscrasia, which is of grave significance and suggestive of purpura hemorrhagica. In a few patients, large purpuric areas developed in the skin.

We feel that this condition is due to a depressant influence exerted by the initial infection on the bone marrow, and that it is closely related to the next extraordinary feature of the disease.

2. *Leukopenia.*—In the influenzal stage, leukopenia was practically always found, and at first it appeared to be a feature also of the pneumonic stage. Indeed, one saw many full blown cases of apparently lobar pneumonia with a leukocyte count of less than 5,000; there were five cases with a count of 3,000 or less. Smears from the lungs of some of the fatal cases showed innumerable diplococci with the large pneumococcus type of capsule, and the cultures were positive for pneumococci.

But other pneumonia patients with early leukopenia recovered, and when subsequent counts were made, it was found that in each case there was a gradual rise to from 10,000 to 24,000 leukocytes.

The conviction gradually developed, therefore, that the influence of the initial infection was a depressant one on the bone marrow resulting in leukopenia, while, on the contrary, the pneumonic infection tended to stimulate, as usual, the production of leukocytes, which gradually increased in number in the blood stream as the depressant influence waned. The leukocyte counts, from which the foregoing conclusion was drawn, are given in Table 1.

TABLE 1.—LEUKOCYTE COUNTS IN ONE HUNDRED AND FORTY-EIGHT CASES OF PNEUMONIA

Leukocyte *Counts*		2,000-3,000	3,000-5,000	5,000-7,000	7,000-10,000	10,000	Average Count
Fifty-Six Fatal Pneumonia Cases:							
First counts	56	3	26	8	12	7	6,320
Second counts	13	..	6	1	5	1	6,730
Third counts	1	..	..	1	..	..	5,800
Ninety-Two Nonfatal Pneumonia Cases:							
First counts	92	2	18	34	14	24	8,300
Second counts	30	..	7	8	5	10	9,080
Third counts	11	..	..	1	2	8	12,500
Fourth counts	8	..	..	..	1	7	15,000
Total counts	211	5	67	52	38	48	

Average leukocyte count in 86 influenza cases, 6,000.
Average first count in 148 pneumonia cases, 6,800.

3. *Types of Pneumonia.*—Two characteristic types of pneumonia were differentiated.

(*a*) Lobar Pneumonia Type: The first, and most common type, was that which when well developed gave the physical signs of lobar pneumonia. The onset usually occurred when defervescence of the symptoms of the initial infection was almost or quite complete, about the third or fourth day. It was ushered in frequently by a chill, a sharp rise of temperature, a localized explosive shower of fine râles usually about the angle of the scapula and more frequently on the left side, and bloody sputum, amounting often to marked hemoptysis. A few roentgenographic examinations at this stage showed shadows indicating that already consolidation was beginning. Occasionally the milder of these cases cleared up quickly without further signs of pneumonia developing, but most of them proceeded to a stage of definite signs of consolidation of one or more lobes.

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[1] Christian, H. A.: Incorrectness of the Diagnosis of Death from Influenza, The Journal A. M. A., Nov. 9, 1918, p. 1565.

The temperature curve was irregular, frequently not rising as high as from the initial infection, and usually ending by lysis, the mean duration of the pneumonia fever being about seven days. The pulse rate was slow in proportion to the fever, and the blood pressure was low, the systolic pressure frequently being 100, and the diastolic pressure from 40 to 50. The pulse pressure was good, and there were no signs of cardiac insufficiency except in the fatal cases after the onset of respiratory insufficiency and shortly before the end. The danger never appeared to arise from the effect of the infection on the cardiovascular mechanism.

The respiratory rate, likewise, was slow in proportion to the fever until the toxemia became marked, when the respirations became accelerated and the respiratory abdominal excursions limited. The chief toxic effect of the infection seemed to be exerted on the respiratory mechanism, failure of which, due to excessive toxemia and to the mechanical effect of extensive consolidations and hemorrhagic edema of the lungs, caused the death of patients.

We do not know whether this type is a true lobar pneumonia or a massive bronchopneumonia due to the fusion of small areas, but we believe that it is a lobar pneumonia with the pathologic picture modified by the hemorrhagic exudate and the paucity of leukocytes.

Our reasons for this opinion are:

(1) The onset of the pneumonia was sudden, usually with a chill, frequently after the temperature of the initial infection had fallen almost or quite to normal, and there was no intermediate stage of the physical signs of bronchitis.

(2) The mean duration of the pneumonia fever was about seven days.

(3) The lungs at necropsy showed massive, air-free consolidations without any definite lobular pattern; no pus could be expressed from the bronchi; the bronchial mucosa did not show a purulent exudate or any special inflammatory thickening or change other than marked congestion, and there was practically no fibrin in the exudate. These findings were in marked contrast to the true bronchopneumonia type to be described presently.

(4) The avenue of infection of the lungs did not appear, therefore, to be by extension along the bronchial mucosa, but by way of the blood stream, as is probably the case in ordinary lobar pneumonia.

(5) The bacteriologic findings were different from those of the bronchopneumonia type.

(*b*) *Bronchopneumonic Type:* The second type was that of true bronchopneumonia. The onset was not clearly defined, the course being continuous with that of the initial infection; the temperature curve was irregular; the sputum was not bloody, but purulent ("nummular"); physical signs of diffuse bronchitis were usually present. Fatal cases sometimes showed a low or even normal temperature with cyanosis and marked "air hunger." The patient belonging to this group had a normal temperature, good pulse, no sputum, and no râles in his chest. The percussion note over the lungs was hyperresonant, the breath sounds distant and scarcely audible; there was marked dyspnea and cyanosis. The diagnosis was not suspected until necropsy disclosed the real condition. The bronchi were full of pus; and little nodules, bronchopneumonic consolidations, were scattered uniformly throughout the lungs. Death appeared to be due to actual asphyxiation.

Five patients with this type of pneumonia developed a puzzling subcutaneous emphysema, which, in the most marked case, extended from the forehead to Poupart's ligament in front and the buttocks behind. The postmortem examination demonstrated in two cases that emphysematous air cells at the root of the right lung had ruptured into the loose mediastinal tissues, and that the air had progressed upward to the neck, and infiltrated the subcutaneous tissues. Cultures from the subcutaneous tissue for anaerobic organisms were negative.

The clinical features of this type, and also the pathologic features, to be described, indicated that it was due to a direct extension of the inflammation down the bronchial mucosa. *B. influenzae* was found in cultures from the pus droplets of the small consolidated areas in the three cases carefully studied bacteriologically at necropsy—twice in pure culture, one with *M. catarrhalis.*

The leukocyte counts in this group are few. In two fatal cases there were 7,600 and 6,000 leukocytes, respectively. In the second case the count rose to 16,400 before death. *B. influenzae* was present in pure culture in the lungs in both cases.

We cannot estimate the relative percentages of the two types of pneumonia, for they were differentiated but late in the epidemic, and the clinical records do not enable one to separate them. It is certain, however, that the first type is far the more common, but the second type is by no means infrequent.

4. *Other Clinical Features of Interest.*—These may be thus grouped together:

(*a*) Frequency of pneumonic involvement of the left lower lobe.

(*b*) Irregularity of the pneumonia temperature and infrequency of termination by crisis.

(*c*) Frequency and grave significance of cyanosis, which often seemed to appear before the onset of respiratory insufficiency.

(*d*) Relatively slow pulse and respiratory rates associated with high temperatures.

(*e*) Low systolic and diastolic blood pressure and good pulse pressure.

(*f*) Relative infrequency of otitis media.

(*g*) Infrequency of empyema and other complications of pneumonia (in only one pneumonia case did empyema develop).

(*h*) High pneumonia mortality rate.

PATHOLOGIC FEATURES

Deaths were always due to pneumonia. In thirty postmortem examinations, lobar pneumonia was diagnosed twenty-five times, bronchopneumonia, five times.

The two types presented striking differences at the postmortem examination:

1. *Lobar Pneumonia Type.*—Frothy, bloody serum poured from the nose and mouth when the body was moved or the head lowered. On section of the skin, dark blood oozed from the cut vessels. The pleural cavities always contained a quantity of serosanguineous fluid, but the pleurae did not show the fibrinopurulent exudate commonly found in lobar pneumonia.

The lungs were extensively involved, there being practically always large areas of consolidation in several lobes; hemorrhages under the pleurae were frequently seen; the lungs were dark red and irregularly mottled, very moist and bloody, the cut surface smooth and velvety; the consolidated areas contained no air, and no pus could be expressed from the bronchi. The early condition was that of acute hemorrhagic edema.

The peribronchial lymphatic glands were very large, dark red, congested, soft and friable.

The heart muscle was dark red, relaxed and flabby, offering a strong contrast to the firm, contracted left ventricle nearly always present postmortem in bodies of patients dying from lobar pneumonia; the heart's blood was fluid and dark, there being only small, flimsy, postmortem clots and no "chicken fat" clots. The abdominal viscera showed marked congestion, the glomeruli of the kidneys standing out distinctly.

Microscopically, the alveoli of the lungs were full of red blood cells in the portions recently involved; in the older portions polymorphonuclear leukocytes became more or less prominent in the exudate; no fibrin was seen; the bronchi were not plugged with pus; the blood vessels were engorged.

2. *Bronchopneumonia Type.*—The tissues of the bodies were dry; there was no "frothing at the mouth"; no blood oozed from small cut vessels; the pleural cavities contained no fluid, but there were patchy areas of fibrinopurulent exudate with recent, easily separated pleural adhesions.

The lungs were very pale and extremely voluminous, and did not collapse when the chest was opened. Emphysematous bullous-like areas beneath and elevating the pleurae were common; these had transparent bubble-thin walls and were divided into numerous compartments by the walls of the dilated air cells. Pus streamed from the trachea when the lungs were removed. Small areas, from 2 to 5 mm. in diameter, of consolidated tissue were scattered uniformly throughout the lungs, and these little areas felt like disseminated conglomerate tubercles. On section, the lungs were dry, the solid areas were gray and granular in appearance, and a drop of pus could be expressed from the center of each. In one case, about half of the right upper lobe was consolidated; it had a mottled gray, granular appearance, and there were numerous points where droplets of pus could be expressed, the large area of consolidation being evidently formed by the confluence of smaller areas of bronchopneumonia.

The peribronchial lymphatic glands were very large, the cut surface gray and granulated. They were soft and friable.

The heart showed nothing remarkable, nor did the abdominal viscera. In one case the spleen was quite large and the malpighian bodies stood out distinctly, and the liver and kidneys showed cloudy swelling. In two necropsies the mediastinal and subcutaneous tissues showed marked emphysema due to the rupture of dilated thin walled air cells on the anterior surface of the root of the right lung into the loose mediastinal tissue.

Microscopically, the consolidated areas of the lungs showed a bronchiole full of pus cells and the surrounding alveoli packed with pus cells and desquamated epithelium, and there was considerable fibrin formation. The air cells of the adjacent uninvolved lung were dilated and the walls were thin; the vessels were *not* engorged.

BACTERIOLOGIC FEATURES

Cultures from the nasopharynx were made from every patient admitted to two of the wards; 148 patients were examined, and *B. influenzae* was isolated from thirty-seven patients, or 25 per cent. Ten of these patients, or 27 per cent., developed pneumonia. The findings in this series are given in Table 2, which shows also the number of patients that developed pneumonia.

TABLE 2.—BACTERIOLOGIC FINDINGS IN CULTURES FROM THE NASOPHARYNX OF ONE HUNDRED AND FORTY-EIGHT SUCCESSIVE EPIDEMIC CASES

	Number	Per Cent.	Developed Pneumonia	Per Cent.
B. influenzae with other organisms	37	25	10	28
Pneumococcus alone	67	45	15	22
Pneumococcus and streptococcus	22	15	4	18
Pneumococcus, streptococcus and M. catarrhalis	5	3	2	40
Total pneumococci	94	63	21	22
Total streptococci	27	18	6	22
M. catarrhalis alone	16	11	2	12.5
Total M. catarrhalis	21	14	4	19

Similar cultures from the nasopharynx were made in 537 cases. These were usually selected severe cases of respiratory infections. The results are given in Table 3, and other bacteriologic findings in tables that follow.

TABLE 3.—BACTERIOLOGIC FINDINGS IN CULTURES FROM THE NASOPHARYNX OF FIVE HUNDRED AND THIRTY-SEVEN SELECTED SEVERE EPIDEMIC CASES

	Number	Per Cent.
B. influenzae	259*	46
Pneumococci	149	28
Streptococci, all kinds	160	30
Staphylococci, all kinds	64	12
M. catarrhalis	62	11.5

* B. influenzae was usually associated with other organisms. There were a few pure cultures.

TABLE 4.—BACTERIOLOGIC FINDINGS IN CULTURES FROM THE NASOPHARYNX OR SPUTUM OF ONE HUNDRED AND FIFTY-EIGHT PNEUMONIA CASES

	Number	Per Cent.
B. influenzae	58*	38
Pneumococci	64	40.5
Streptococci, all kinds	46	29
Staphylococci, all kinds	21	13
M. catarrhalis	11	7

* B. influenzae was practically always associated with other organisms.

In three cases of the bronchopneumonia type, smears from the pus droplets expressed from the small consolidated areas in the lungs showed innumerable small gram-negative bacilli, and *B. influenzae* was cultivated, twice in pure culture and once with *Micro-*

coccus catarrhalis. Cultures from the heart's blood were negative in all three cases.

Pneumococci from all cultures were typed thirty-eight times.

For cultures of *B. influenzae* during the first part of the epidemic, the surface of ordinary blood agar plates was inoculated. Later the blood agar was heated to 70 C. for fifteen minutes, poured in plates, and the surface inoculated. The latter method proved much more effectual for the isolation of *B. influenzae.*

TABLE 5.—BACTERIOLOGIC FINDINGS IN POSTMORTEM CULTURES FROM THE LUNGS IN TWENTY LOBAR PNEUMONIA CASES

	Number	Per Cent.
B. influenzae and S. viridans	1	5
B. influenzae and pneumococci	2	10
Pneumococci alone	9	45
Pneumococci and S. hemolyticus	1	5
S. viridans alone	1	5
	1	20
	0	0
	2	10

TABLE 6.—BACTERIOLOGIC FINDINGS IN POSTMORTEM CULTURES FROM HEART'S BLOOD IN TWENTY LOBAR PNEUMONIA CASES

	Number	Per Cent.
B. *influenzae* and S. viridans	1	5
B. influenzae and pneumococci	2	10
Pneumococci alone	7	35
Pneumococci and S. hemolyticus	1	5
S. hemolyticus alone	1	5
S. viridans alone	1	5
Staphylococci	4	20
Sterile cultures	3	15

TABLE 7.—TYPES OF PNEUMOCOCCI IN THIRTY-EIGHT CULTURES

Types	Number	Per Cent
1	0	0
2	3	8
2 a	1	3
3	0	0
4	34	89

ETIOLOGY

The results of the bacteriologic examinations are disappointing and their value small in proportion to the amount of work entailed.

B. influenzae was a common organism during the epidemic, and was the one encountered most frequently in the group of selected severe respiratory infections. It was less frequently found than the pneumococcus in the series of 148 consecutive cases, and it was isolated only three times in the postmortem cultures from the lungs and three times from the heart's blood in twenty lobar pneumonia cases, twice with the pneumococcus and once with *Streptococcus viridans.* It was present, however, in cultures from the lungs in all of three fatal cases of bronchopneumonia, twice in pure culture and once with *Micrococcus catarrhalis.*

In view of the fact that *B. influenzae* is rather an uncommon organism in most epidemics of infections of the upper respiratory tract, its relative frequency in this epidemic may be of some etiologic significance. Otherwise there is no evidence that it is more than an incidental or secondary invader. Certain clinical phenomena point to the latter view, and to the fact that the organism initiating the epidemic is unknown.

The argument based on the clinical phenomena referred to is:

1. The initial infection, that is, the epidemic disease, apparently caused the hemorrhagic phenomena and the leukopenia.
2. In the purest and most intense *B. influenzae* infections (that is, in the three bronchopneumonia cases in which *B. influenzae* in great numbers was found in the pus filling the bronchial tree), there were no hemorrhagic manifestations, and two leukocyte counts in one of the cases showed a rise from 6,800 to 16,400.
3. Therefore, it seems improbable that *B. influenzae* was the organism initiating the epidemic.

It may be objected that there is no proof that the initial infection caused the hemorrhagic phenomena, which might have been caused by a secondary invader with special characteristics, for example, pneumococcus Type IV. This objection is difficult to meet, especially in view of the fact that fatal cases of the lobar pneumonia type showed hemorrhagic phenomena of extreme degree and a persistent leukopenia. However, many uncomplicated cases of the epidemic disease manifested hemorrhagic phenomena and usually leukopenia, while in nonfatal secondary pneumonia cases both the hemorrhagic phenomena and the leukopenia disappeared during the course of the pneumonia. As we have stated elsewhere, we believe that the hemorrhages and the leukopenia were both due to a depressant action of the initial infection on the bone marrow, and that the secondary pneumonia infection tends to reactivate the bone marrow, which responds as the primary influence wanes. We believe, further, that in fatal cases the depressed bone marrow cannot react to the secondary stimulus, and hemorrhages and leukopenia persist.

From the evidence at hand, we feel justified, therefore, in adopting the following working hypothesis:

(*a*) The organism of the initial infection of the epidemic is unknown. It seems probable that it is an ultramicroscopic filtrable virus.

(*b*) Important features of the initial infection are hemorrhagic phenomena and leukopenia, indicating depressed activity of the bone marrow. Microscopic studies of the bone marrow and studies of the blood with reference to the platelets and the elements of coagulation are indicated.

(*c*) The primary infection causes lowered resistance to certain secondary organisms.

(*d*) The lobar pneumonia type of the secondary pneumonias is caused by a number of organisms, chief of which are pneumococci, *Streptococcus hemolyticus* and *Streptococcus viridans.* Pneumococci, Type IV, predominate.

(*e*) The bronchopneumonia type of the secondary pneumonia is caused by *B. influenzae.*

SPECIAL BLOOD EXAMINATIONS

Coagulation Tests.—An attempt was made to determine whether or not some element of coagulation was lacking in the blood. Two methods were used.

1. The coagulation time of the blood of fifteen patients was determined by the following technic: A syringe was thoroughly cleaned and sterilized, and the walls were moistened with physiologic sodium chlorid solution, enough being left to fill the needle so as to prevent the introduction of tissue juices. The needle was then introduced into a vein, an attempt being made to plunge it immediately into the vein so as to avoid

injuring tissues. Four c.c. of blood were aspirated and expelled into a thoroughly cleaned and dried test tube, 20 mm. in diameter. The blood was allowed to coagulate until the clot held intact to the bottom, when the tube was inverted. The time required for this was taken as the criterion of the coagulation time. The results are given in Table 8.

TABLE 8.—COAGULATION TIME WITH FRESH BLOOD AND 20 MM. TEST TUBES

	Number of Cases	Coagulation Time, Minutes
Normal controls	4	From 12 to 18
Hemorrhagic cases	3	6½ to 10
Hemorrhagic cases	11	11 to 15½
Hemorrhagic cases	1	22

The variations of the coagulation time were within the limits of accuracy of the test, and showed no definite deviations from normal.

2. A second series of eleven tests was made by oxalating the blood, making a total strength of 0.1 per cent. sodium oxalate, separating the plasma and adding increasing quantities of calcium chlorid, 0.5 per cent. Five drops of plasma were placed in each of three small tubes, and 1, 2 and 3 drops, respectively, of the calcium chlorid solution were added. The tube in which coagulation occurred first was taken as the one indicating the coagulation time.

TABLE 9.—COAGULATION TIME WITH OXALATED PLASMA AND CALCIUM CHLORID *

	Number of Cases	Coagulation Time, Minutes
Normal controls	3	From 7 to 12
Hemorrhagic cases	2	Under 7
Hemorrhagic cases	4	7 to 12
Hemorrhagic cases	3	12½ to 16
Hemorrhagic cases	1	17
Hemorrhagic cases	1	5½ hours

* Simon, C. E.: A Manual of Clinical Diagnosis, Philadelphia, Lea & Febiger, 1918, p. 105.

Four of the foregoing tests showed apparently a slight increase of coagulation time, and one a marked increase, the plasma requiring five and one-half hours to coagulate. A second test of this blood, made six hours after the administration intravenously of coagulen (to be discussed later) showed a coagulation time of only sixteen minutes.

The first method of testing coagulation time requires extreme care, for there are many influences tending to error that must be controlled. These influences all tend to shorten the coagulation time. Therefore, the absence of delayed coagulation in the series is not conclusive proof that some element of coagulation is not deficient.

The second method is less subject to technical errors, and the results are more dependable. The results of the tests in this series, however, are not sufficiently definite for conclusions to be drawn. The single test showing a markedly prolonged coagulation time, in the absence of other corroborative tests, must be looked on with the suspicion that the delay was due to some error in technic.

Bleeding Time.—A clean puncture of the ear was made, and the drop of blood was blotted up every fifteen seconds with filter paper until the paper was no longer stained. The time required is the "bleeding time" (Duke). The few tests that we made showed bleeding times within normal limits—from one and one-half to three minutes. A prolongation of bleeding time, according to Duke, is due to platelet deficiency, the number being insufficient to block the ends of the bleeding vessels. There was no evidence, therefore, from these tests that a deficiency of blood platelets existed. No platelet counts were made, but examination of carefully prepared cover-glass preparations of blood showed no apparent decrease of platelets.

Summary.—Clinical phenomena indicate that an important and grave feature of the epidemic disease is a blood dyscrasia manifested by hemorrhages and leukopenia. It is thought to be due to a depressant influence exerted by the initial infection on the bone marrow. Our incomplete laboratory examinations have not indicated clearly the nature of the blood dyscrasia, if there be one.

TREATMENT

Nonspecific.—Patients suffering from the upper respiratory infections received only the usual care of rest in bed, abundant food, cathartics and palliatives, such as acetylsalicylic acid. Great care was taken during convalescence to avoid exposure and overexertion, which, we believed, might be predisposing, etiologic factors of pneumonia.

The pneumonia patients were treated from the point of view of husbanding the defensive resources of the patient in order to gain time for the development of the offensive forces of immunity. Therefore, considering the fact that the work of the heart and respiratory mechanism is already increased above normal in pneumonia, stimulants were avoided, and an effort was made to keep the patients as nearly as possible at rest. Morphin was used freely to allay restlessness, pain and coughing and in an effort to reduce the respiratory rate and to increase the abdominal respiratory excursions, thereby to prevent fatigue of the respiratory center and to increase the efficiency of each respiratory effort. We felt safe in any given case as long as the abdominal respiratory movements remained good. The heart appeared to be affected relatively little by the infection, and the pulse usually continued good after respiratory insufficiency had set in. Oxygen was given for periods of five minutes with twenty-minute intervals to patients with respiratory insufficiency and cyanosis. It seemed to give temporary relief to some patients, but there was no evidence that it affected the final outcome. As a last resort, camphorated oil and caffein were given hypodermically as stimulants in a vain effort to "tide over" a critical period. Digitalis was not used. During the first half of the epidemic, whisky, one-half ounce, and strychnin, one-fortieth grain by mouth, were given alternately every two hours. These doses did not appear to have any effect on the patients, and it is our impression that the patients in this series did no better or worse than those of the later series, nor was there any significant difference in the mortality of the two series. Hydrotherapy was used externally and internally to combat the fever and toxemia.

In our plan of symptomatic treatment we find that we are in complete accordance with Strouse and Bloch.[2]

In regard to the use of opiates, one of us (Brem) has studied the effect on the respirations in pneumonia of a combination of heroin, one-twelfth grain, and codein, one-fourth grain, given hypdermically, and he has found it preferable to morphin for the prevention of respiratory fatigue. Heroin and codein seem to have a synergistic action, and they often lessen markedly the respiratory rate while definitely increasing the respiratory excursions. They should be given every four hours for a respiratory rate of 36 or greater, a rate of 40 per minute having been found to be approximately the danger line.

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[2] Strouse, Solomon, and Bloch, Leon: Notes on the Present Epidemic of Respiratory Disease, The Journal A. M. A., Nov. 9, 1918, p. 1568.

Their effect is slight when the respiratory rate approaches 50 per minute. Pneumonia patients tolerate well large amounts of opiates, and the only contraindications are tympanites and a failure of the respirations to increase in depth while lessening in rate. The latter contingency should be judged by the excursion of the abdominal respiratory movements.

In two cases of the bronchopneumonia type, epinephrin and atropin were given to dilate the bronchi, and the head was lowered to promote drainage. The treatment was ineffectual, and both patients died.

Specific Treatment.—Polyvalent antipneumococcus serum was given in four unselected cases early in the course of pneumonia. Two of these patients made rather rapid recoveries, one ran a moderately severe course but recovered, and one died. This did not seem to be a deviation from the natural course of the disease uninfluenced by treatment, and since we did not consider the treatment immunologically hopeful we did not continue it.

Serum from five convalescent patients was pooled and 35 c.c. were given to each of five selected dangerously ill patients, all of whom were spitting blood. Though the blood spitting practically ceased in four cases and decreased in the fifth, all five patients died. This series does not furnish evidence against the value of convalescent serum, for only one comparatively small dose was administered to each patient, and at that time all of the five patients were extremely ill. We should have pursued investigations along this line but for other considerations, which will be discussed presently.

Antipneumococcus serum, Type I, was not used, as no Type I pneumococci were isolated.

Vaccines have not been used either prophylactically or in the treatment of the epidemic cases, as it seemed to us that there was no reasonable hope of benefit to be derived from their administration.

Coagulen Treatment.—In view of the frequent bleeding, it was thought that some coagulant might be effectual in combating the hemorrhagic diathesis. One of us (Casper) suggested a trial of coagulen-Ciba. As the first few intravenous injections seemed to check epistaxis and blood spitting within twelve hours, its use was continued and the results proved gratifying. At one time, we were unable to obtain coagulen, and thromboplastin-Squibb was substituted. This preparation did not prove as effectual as coagulen, and its use was abandoned. The apparent result of coagulen treatment on the mortality rate is shown in Table 10.

It is evident that coagulen is ineffectual when administered to seriously ill patients in the late stage of the disease. This result was anticipated. But the low mortality, 6.5 per cent., in the unselected early group against the 36 per cent. general mortality for pneumonia in the epidemic, seems very significant, especially when considered together with the clinical observation that visible hemorrhage (epistaxis, blood spitting and metrorrhagia) appeared to be checked by the administration of coagulen.

By "unselected" in the unselected group, it is meant that the patients were not selected with reference to the mildness of the symptoms. They were selected in the sense that they manifested some evidence of hemorrhage.

We feel that the beneficial result was due to the prevention of further hemorrhage into the alveoli of the lungs. The pathologic evidence favors the view that the initial pulmonary pathology of the lobar pneumonia type is a hemorrhagic edema. Several of the patients to whom coagulen was given had had a sharp rise of temperature during defervescence of the initial attack, they had begun to expectorate bloody sputum, and the characteristic explosive shower of fine râles could be heard over a large localized area about the angle of the scapula. After the coagulen injection, the blood spitting ceased, no physical signs of consolidation of the involved area developed, and the patients made a rapid recovery. However, roentgenographic examination made early in convalescence showed that there had been considerable central consolidation of the lung in the area where the râles were heard.

TABLE 10.—RESULTS OF COAGULEN TREATMENT

	Cases	Deaths	
		Number	Per Cent.
Total patients treated	70		
Unselected cases, early lobar pneumonia type	16	3	6.5
Selected cases, late, seriously ill, lobar pneumonia type	7	7	100.0
Total deaths from coagulen-treated pneumonia patients	..	10	18 9

Comment.—The modus operandi of coagulen action is not clear. Our laboratory tests, which are incomplete, do not show, with one exception, a delayed coagulation time, though postmortem findings indicate that such is the case. Further tests may correct those we have made. If the blood dyscrasia were due to platelet deficiency, the action would be more difficult to explain, for platelet deficiency can be effectually combated, so far as is known, only by the transfusion of fresh whole blood. Counts of the platelets were not made. However, the "bleeding time" was not prolonged in the tests made, and therefore platelet deficiency seems unlikely. Blood smears did not show any apparent decrease of platelets.

We are aware that Hanzlik,[3] in testing coagulen, administered intravenously to bleeding dogs, found its influence on the hemorrhage variable, and that the results ran parallel with the effect on the blood pressure. But his experiments were made with presumably healthy dogs in whose blood no element of coagulation was lacking. It is probable that these experimental data do not indicate what might happen in a blood dyscrasia due, for example, to prothrombin deficiency, which coagulen might remedy.

We wish to emphasize that we hold no brief for coagulen to the exclusion of other coagulants. It has been found to be a convenient and apparently efficient remedy. But it is quite possible, and indeed probable, that some other antihemorrhagic agent may be more efficient. We attribute the results obtained solely to its influence on the hemorrhagic diathesis, and we would suggest that other remedies that have given apparently good results (convalescent serum, horse serum and polyvalent antipneumococcus serum) act in the same manner.

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[3] Hanzlik, P. J.: Journal Pharmacol. and Exper. Therap., 1918, 12, 119.

We have prepared coagulen for intravenous injection by dissolving 1.5 gm. in 30 c.c. of distilled water or salt solution, making a 5 per cent. solution. This is sterilized by boiling two minutes and the cloudy preparation is not filtered.

With the first lot used, no reactions were observed following the injections, but with the second lot a chill and increased fever frequently followed. On the following day the fever usually dropped to or nearly to normal. In other words, there seemed to be a reaction similar to the reactions following intravenous typhoid vaccination, proteose injections, etc. The result appeared to be beneficial, but we do not advocate using coagulen from this point of view, and we would prefer, at present, not to induce the "chill and fever shock," for the mechanism of its beneficial action and the conditions of safety are not understood. However, in our cases it has done no harm.

SUMMARY

1. The epidemic of acute respiratory infections numbered about 3,000 cases. A secondary pneumonia developed in 408 of the cases, an incidence of about 14 per cent. There were 147 deaths from pneumonia, a mortality of 36 per cent. for the pneumonia series, and of about 5 per cent. for the epidemic.

2. Hemorrhage was a prominent feature of the epidemic cases. Epistaxis was common, blood spitting and even hemoptysis occurred in the pneumonia cases, metrorrhagia was the rule in female patients, purpura of the skin occurred several times, and necropsies showed a fluid condition of the blood and hemorrhagic edema of the lungs. There was, therefore, clinical evidence of a hemorrhagic blood dyscrasia. Laboratory tests to determine the nature of the dyscrasia did not furnish conclusive evidence.

3. Leukopenia was constant during the initial infection and during the early stage of pneumonia. It persisted throughout the course of most of the fatal cases of pneumonia, but during the course of the nonfatal cases the leukocytes gradually rose to from 10,000 to 24,000. The conclusion was reached that the initial infection exerted a depressant influence on the bone marrow, while the secondary pneumonic infection tended as usual to stimulate the production of leukocytes, which increased in number as the primary influence waned.

4. The secondary pneumonias divided themselves into two types: (1) the lobar pneumonia type, and (2) the bronchopneumonia type.

5. Bacteriologic studies threw no light on the etiology of the initial infection. *B. influenzae*, pneumococci (nearly all of Type IV), and streptococci were the predominating organisms found. It is believed that the virus of the initial infection of the epidemic is still unknown; that the secondary lobar pneumonias were due to pneumococci and streptococci, pneumococci predominating, and that the bronchopneumonias were due to [illegible]

6. Treatment of the hemorrhagic diathesis by the intravenous injection of coagulen appeared to be effectual. This treatment was effectual only in the stage of the initial infection and in the early stage of the lobar pneumonia type of the secondary pneumonias. It is of no value in the late pneumonias.

ACUTE MENINGOCOCCIC ENDOCARDITIS AND SEPTICEMIA *

E. B. KRUMBHAAR, M.D. (Philadelphia)
Captain, M. R. C., U. S. Army

AND

J. H. CLOUD, M.D. (Ardmore, Pa.)
First Lieutenant, M. R. C., U. S. Army

FRANCE

Although the portal of entry of the meningococcus has never been demonstrated, the evidence in favor of the nasopharyngeal route to the cerebromeninges has been so strong that it has been more or less generally accepted. Whether, however, it reaches the meninges by way of the blood stream or more directly by the olfactory nerves or ethmoid sinuses is still a much discussed detail. A growing list of cases of meningococcic septicemia (Baeslack and collaborators,[1] Raffaelli[2] and others) and a few acute meningococcic endocarditis (Worster-Drought and Kennedy,[3] Cecil and Soper[4]) have now been reported.[5] Furthermore, the type of initial fever and the finding of meningococci in the petechiae and elsewhere indicate that in many cases at least the infection is temporarily generalized (Netter[6]) and the occasional isolation of meningococci from the blood prior to their detection in the spinal fluid is added proof that the route of entry from the nasopharynx is probably the blood stream. It would seem probable that, just as typhoid and pneumonia (which start as local diseases of the intestine and lung) are for a short period true septicemias with occasional lesions of distant parts, so also the meningococcus invades the whole system, but in the majority of cases eventually exerts a selective affinity for the meninges. In a few the septicemic features may persist and overshadow the meningitic element (Nankivell[7]) or even cause death without either clinical or postmortem signs of meningitis (Herrick,[8] Pybus,[9], Andrewes,[10] and Cecil and Soper[4]).

Such facts as the foregoing have led Herrick to believe that the disease is not primarily a meningitis, and that "meningococcic sepsis," or "spotted fever," are better terms than "epidemic cerebrospinal meningitis." Similarly he believes that intravenous serum treatment should precede and is more important than intraspinal injections. Whether or not further investigations will support this extreme view, the following three cases, occurring within a year among sixteen cases of cerebrospinal meningitis, may add weight to the already imposing list of this type of case:

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* From No. 16 General Hospital, B. E. F.

[1] Baeslack, F. W.; Bunce, A. H.; Brunelle, G. C.; Fleming, J. S.; Klugh, G. F.; McLean, E. H., and Salomon, A. V.: Cultivation of the Meningococcus Intracellularis (Weichselbaum) from the Blood, The Journal A. M. A., March 9, 1918, p. 684.

[2] Raffaelli, G.: Sulla Presenza del Meningococci nel Sangue, Gaz. d. Osp., 1917, **38**, 685.

[3] Worster-Drought, C. W., and Kennedy, A. M.: Cerebrospinal Fever: Mode of Infection by the Meningococcus, Lancet, London, 1917, **2**, 711.

[4] Cecil, R. L., and Soper, W. B.: Meningococcus Endocarditis with Septicemia: Its Bearing on the Mode of Infection in Epidemic Cerebrospinal Meningitis, Arch. Int. Med., July, 1911, 1.

[5] The rarity of meningococcic endocarditis is shown by the statement of MacCallum (Textbook of Pathology, Ed. 1, p. 528) that only one such case occurred in his long service and none in Councilman's.

[6] Netter, A.: The Presence of the Meningococci in the Purpuric Elements of Meningococcic Infections, Brit. Jour. Child. Dis., 1917, **14**, 101, 104; Rev. de med., 1917, **35**, 133.

[7] Nankivell, A. T.: Personal communication to the authors.

[8] Herrick, W. W.: The Epidemic of Meningitis at Camp Jackson, The Journal A. M. A., Jan. 26, 1918, p. 227.

[9] Pybus, F. C.: Case of Fulminating Meningococcus Septicemia, Lancet, London, 1917, **1**, 803.

[10] Andrewes, F. W.: Case of Acute Meningococcal Septicemia, Lancet, London, 1906, **1**, 1172.

REPORT OF CASES

Case 1.—*Clinical History.*—Private S. M., aged 28, had been in the service eleven months and in France four months. His past history was negative, except for occasional attacks of bilious vomiting and furunculosis. His present illness began suddenly with rigor followed by pyrexia and vomiting. The patient stated that he had very severe pains in the back of the head and neck and pain in the back. The pain in the neck was greatly aggravated by motion and radiated down the spine. Pain was also felt in the shins. The heart and lungs were normal. The vomiting continued for several days, jaundice appearing on the fifth day. Pyrexia continued between 101 and 102 F. and the pulse from 80 to 90 per minute. On the seventh day of the disease, a generalized purpuric eruption appeared all over the body, most marked on the limbs (that is, five days later than in Case 2). The leukocyte count at this time was 35,000, and a lumbar puncture gave a turbid fluid, under pressure, with numerous polymorphonuclear leukocytes but no organisms. The next day the patient complained of intense headache and pain in the back of the neck. There was distinct muscular rigidity. The abdominal reflexes were normal, and a slight Kernig's sign was obtained. The Babinski reflex was negative. The purpuric eruption remained unchanged. The eye grounds were normal and the patient was conscious. For the next few days the temperature remained about 103. The patient was drowsy and swallowed with difficulty. The petechial hemorrhages became larger and more extensive. A blood examination at this time (fourteenth day of the disease) showed 48,000 leukocytes (polymorphonuclears, 94 per cent.; small lymphocytes, 4 per cent.; large and transitional cells, 2 per cent). On the following day there was paralysis of the muscles of the left arm, and by the eighteenth day of the disease the patient was unable to swallow. With the exception of the paralyzed muscles, there was general spasticity of the body, the petechial eruption remained the same, and subconjunctival hemorrhages appeared in both eyes. Respiration became more labored; and though the meningeal symptoms seemed lessened during the week, fever continued and the patient gradually failed, till death occurred on the nineteenth day of the disease.

Nine lumbar punctures were made, and each withdrawal of spinal fluid was followed by intrathecal injection of 30 c.c. of curative serums (two of Pasteur's, four of Lister's polyvalent, and three of Gordon's Type II serum). Type II meningococcus had been isolated from the spinal fluid both at the casualty clearing station and the base hospital independently. In addition as the patient's condition at one time seemed more septicemic than meningitic, one intravenous injection of 30 c.c. of Gordon's Type II serum in 1½ pints in physiologic sodium chlorid solution was given.

Laboratory Examinations.—Daily lumbar punctures gave in the beginning an excess of pearly, turbid fluid, with 96 per cent. of polymorphonuclears, and on standing a heavy, yellowish, purulent sediment. Gram-negative, intracellular diplococci were found without difficulty in the first two smears. On trypsin agar plates there were a few viscid, white colonies, which grew on agar only at incubator temperature, gave acid on glucose and not on saccharose, and agglutinated up to 1 : 400 with Type II (Gordon) antiserums and slightly with Type IV antiserums. From the third puncture on, the spinal fluid was clear and colorless, and no organisms were obtained in either smear or culture. (On the last smear examined, from fluid taken shortly before death, two large clumps of apparent meningococci were observed.)

Necropsy.—There were numerous petechiae, not only of the skin, but also of the pleura-pericardium, and peritoneal covering of the stomach and liver, and of the mucosa of the stomach, intestine, the pelvis of kidney and the ureters. The heart was of normal size and color. On the posterior aortic valve was a rather soft, flat, grayish vegetation, 3 mm. in diameter, and on the anterior aortic and both mitral valves, several soft, glistening, yellowish, minute spots, that were easily wiped off. Smears from these valves showed numerous polymorphonuclears and many large, round, gram-negative cocci, mostly in pairs, both intracellularly and extracellularly. Smears from the heart's blood and pericardial fluid gave similar results. Examination of the brain and cord showed a slight excess of clear, serous fluid, but no gross microscopic signs of meningeal inflammation or exudate. A smear of subpial scrapings showed a few polymorphonuclear and intracellular meningococci. The other organs showed nothing noteworthy except areas of intense congestion of the kidney, liver and spleen, and localized infiltration of leukocytes and beginning hyaline change in these organs.

Case 2.—*Clinical History.*—Lance Corporal L. D. D., aged 23, three years in the service and two years in France, with negative history, was taken suddenly ill, on April 4, 1918, and soon developed a temperature of 104 F. with rapid pulse and muttering delirium, alternating with periods of irritability. He did not vomit, the pupils were equal, and there was no squint. The patient's condition was generally spastic, and he quickly sank into what was termed a "typhoid state." There was incontinence of urine. On admission two days later the temperature was 102, pulse 140. The patient was comatose, breathing heavily, the pupils were sluggish, slightly dilated and equal, and at no time could he be aroused. The tongue was coated and moist. There was no vomiting. There was general muscular spasticity. The head was retracted and the neck rigid, while in the muscles of the face were numerous fibrillary contractions, although there was no general convulsion of the body. Incontinence of the urine continued. The bowels were constipated. A petechial rash was profusely distributed over the chest and abdomen, but especially the limbs. The following day the temperature was 102, respiration 66 and pulse 140, death taking place on the afternoon of the 7th, after an illness of about seventy-two hours.

Laboratory Examinations.—The first lumbar puncture was made at No. 2 Stationary Hospital on the second day of illness. The spinal fluid was found to be under pressure, having a slight opalescence. The centrifuged deposit of pus contained a few gram-negative diplococci. During the evening of the same day 30 c.c. of Lister Institute polyvalent automeningococcic serum were given intravenously. The following morning 50 c.c. of clear spinal fluid were removed at this hospital and 30 c.c. of the same polyvalent serum injected intrathecally. The centrifuged specimen of the clear fluid showed a moderate number of gram-negative diplococci, chiefly intracellular, and gave a few characteristic colonies on trypsin agar. These fulfilled the various cultural requirements, but agglutinated with all four of Gordon's type antiserums up to 1 : 400.

Necropsy.—Twelve hours later, no gross evidence of a lesion of the brain or cord or meningeal exudate could be detected. Histologically, the only sign of meningitis present was an occasional leukocyte beneath the pia mater. Near the bases of the mitral leaflets there were numerous minute, glistening vegetations, which could easily be wiped off. Smears from these gave numerous polymorphonuclears and endothelial cells and many gram-negative diplococci. Smears from the heart's blood also showed gram-negative cocci, arranged in pairs and short chains of pairs, and gram-positive rods. Rather marked areas of round cell infiltration were present in the liver and kidney parenchyma, with bile staining of central cells of the liver lobules and fibrous obliteration of some of the kidney tubules and glomeruli.

Case 3.—*Clinical History.*—Private P. W. K., aged 23, was admitted to the hospital after an illness of twenty-four hours with a history of stupor and rigidity of the neck. The temperature was 102.2 F., pulse 78, respiration 38. The past history was negative. On admission the patient was semiconscious, with rigidity of the neck and back and pain in the head and back, and the temperature was 97. The patellar reflexes were normal. Babinski's and Kernig's signs were absent, although the latter had before been well marked. A pronounced petechial rash was present over the shoulders and chest. The lungs were clear and no cardiac murmurs were detected. The following day the temperature was normal, respirations were labored and cyanosis was present. The patient at times was delirious, but for the most part remained quiet in a state of semiconsciousness, responding to questions, when addressed. During the night the pulse became much more rapid and weaker. Tracheal râles were marked and the patient died next morning after an illness of four days. The petechial eruption remained the same throughout.

Laboratory Examinations.—Three lumbar punctures were performed. On the first two occasions more than 75 c.c. of turbid fluid were withdrawn, and from each sample a few intracellular diplococci were found by smear. On trypsin agar on the first occasion a rich growth of pale, viscid, characteristic colonies was obtained, but while these behaved normally on agar, they failed to produce acid on glucose as well as on saccharose. Agglutination tests were not tried. The third lumbar puncture gave 20 c.c. of clear, dark, brownish fluid. Like others it contained a few intracellular organisms, but failed to grow on trypsin agar cultures.

Necropsy.—The spinal pia mater was considerably thickened (2 mm.) and its inner surface bathed in pus. The cerebral and cerebellar pia was thin and transparent, but in the spaces over the large fissures there were distinct collections of pus. Smears from both brain and cord meninges gave numerous polymorphonuclears and numerous large gram-negative diplococci, chiefly intracellular. The cut surface of the cerebrum presented a typical "shaven beard" appearance of minute hemorrhages. The heart was pale and flabby, with some dilatation of the right chambers. A few pin point glistening spots on the mitral valve were shown by smear to contain leukocytes and a moderate number of gram-negative diplococci. There was also an acute staphylococcic pleurisy and confluent bronchopneumonia of the right side. There was a cloudy swelling and congestion of the viscera.

COMMENT

Besides the occurrence of acute vegetative endocarditis in all three cases, and the natural accompaniment of meningococci in the blood stream, there are a few details of the cases to be emphasized. The early appearance of the petechial rash in all, and the isolation of the gram-negative diplococci from the petechiae in the only instance tried, may be taken as evidence of the early generalization of the infection through the body. In such cases, therefore, the early appearance of the petechial rash should be taken as an indication for early intravenous injection of specific antiserum. The earlier form of macular rash that has occasionally been described was not mentioned in the case histories, and the opportunity for determining its presence had passed when the patients had reached this hospital. The lessening of meningeal symptoms in Case 1, and the absence of signs of meningitis at necropsy show the local success of the specific intrathecal treatment. The necessity for intravenous treatment in this case was also realized, but its futility in the presence of acute valvular vegetations needs no further comment.

The presence of intracellular meningococci in the spinal fluid in Case 3 after they failed to grow on trypsin agar is a not uncommon occurrence in this and other laboratories. Whether or not such organisms are to be considered dead or merely influenced in such a way that they will not grow under the artificial methods employed, is a point that cannot now be decided.

SUMMARY AND CONCLUSIONS

1. Three cases of fatal cerebrospinal meningitis, in which acute meningococcic vegetations on the aortic and mitral valves were found at necropsy, emphasize the importance of the possible septicemic factor in this infection.

2. The early occurrence of the petechiae in all three cases may be a useful indication that in similar cases a septicemia has been established, and intravenous as well as intrathecal medication thereby indicated.

3. In the ordinary nonfulminating, nonpetechial type of meningococcus infection (whether or not meningococci have temporarily entered the blood stream), the chief pathologic lesion being undoubtedly in the meninges, the chief route of specific treatment should be intrathecal.

4. The disappearance of meningitic symptoms, with persistence of signs of septicemia, should be an indication to substitute intravenous for intrathecal treatment, although if actual vegetations are present on the valves, it will rarely, if ever, be successful.

5. If, as in cases quoted in the literature, the presence of meningococci can be determined in the blood stream before the onset of meningitis, intravenous treatment may abort an otherwise fulminating case, and should certainly be used.

6. Meningococci may persist in smears from the spinal fluid after they have failed to grow on suitable mediums; but even if they are absent in both tests, specific therapy should be continued until meningitic symptoms have disappeared.

EFFECT OF TYPHOID LIPOVACCINE IN INCREASING SUSCEPTIBILITY TO OTHER DISEASES

ANIMAL EXPERIMENTAL EVIDENCE *

EDGAR M. MEDLAR, M.D., (Boston)
First Lieutenant, Medical Corps, U. S. Army
WASHINGTON, D. C.

From time to time since the use of typhoid vaccine as a prophylactic in the control of typhoid fever, there have been objections on the part of medical officers to its use, the main one being that it predisposes the individual to infection with other diseases. The practical importance of such objections can readily be understood now that our army has reached its present proportions. This series of animal experiments was undertaken in an attempt to increase our knowledge

TABLE 1.—RESULTS OF SIX DAILY INOCULATIONS

Date 1918	Amt. Inoc. 24 Hr. Bouillon Culture C.c.	No. Inoc.	24 Hours		48 Hours		72 Hours		96 Hours		Per Cent. Dead	Per Cent. Lived
			D	L	D	L	D	L	D	L		
9/ 9	1/25	2	2	0	2	0	2	0	2	0	100	0
	1/50	2	1	1	2	0	2	0	2	0	100	0
	1/100	2	0	2	0	2	0	2	0	2	0	100
9/10	1/25	2	2	0	2	0	2	0	2	0	100	0
	1/50	2	1	1	1	1	2	0	2	0	100	0
	1/100	2	0	2	0	2	0	2	0	2	0	100
9/11	1/25	2	2	0	2	0	2	0	2	0	100	0
	1/50	2	1	1	1	1	1	1	1	1	50	50
	1/100	2	0	2	0	2	0	2	0	2	0	100
9/12	1/25	2	2	0	2	0	2	0	2	0	100	0
	1/50	2	1	1	1	1	1	1	1	1	50	50
	1/100	2	0	2	0	2	0	2	0	2	0	100
9/13	1/25	2	2	0	2	0	2	0	2	0	100	0
	1/50	2	1	1	1	1	1	1	2	0	100	0
	1/100	2	0	2	0	2	0	2	0	2	0	100
9/14	1/25	2	2	0	2	0	2	0	2	0	100	0
	1/50	2	1	1	2	0	2	0	2	0	100	0
	1/100	2	0	2	0	2	0	2	0	2	0	100

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* From the Department of Pathology, Army Medical School.

from the experimental side of the effect of typhoid vaccine in lowering the resistance to infection.

Because of the importance that *Streptococcus hemolyticus* infection assumed in the cantonments in 1917-1918, it was thought advisable to take the hemolytic streptococcus as the infecting agent. The strain (No. 23) used was one obtained from a case of empyema at Camp Merritt, N. J.

The animal chosen as the test animal was the mouse, because of its susceptibility to the streptococcus, as well as its availability in the numbers needed.

The first problem to be solved was to get a constant dosage of streptococcus that would kill the minority of the control animals inoculated. It is well known that streptococci can be made highly virulent for mice, i. e., 0.000001 c.c. of an eighteen hour broth culture will kill constantly, and that on subcultures this virulence is rapidly lost. Because of this fact it seemed more practical to raise the virulence and then through subcultures over a considerable period of time establish a dosage of low virulence which would be fairly constant. This is what was done, and Table 1 gives the results obtained for a period of six daily inoculations.

The technic used in order to get a fairly constant growth was as follows: Plain bouillon, reaction + 0.3 to 0.5, was the medium used. A large number of tubes, each with 10 c.c. of bouillon, were prepared from a single lot of beef infusion, and this lot was used throughout the experiment. Subcultures were made daily by transferring one loopful of a twenty-four hour growth. Mice inoculations were made intraperitoneally with a bouillon dilution of a twenty-four hour bouillon growth.

From Table 1 it will be seen that the dosage which would show increased susceptibility best would be

TABLE 2.—RESULTS OF INOCULATIONS WITH STREPTOCOCCUS 23, OF LOW VIRULENCE

Lot No.	Amt. Typhoid Vaccine	Date	Lived	Died	Amt. Strep. Inoculated 24 Hr. Bouillon	No. Inoculated	Date	24 Hours		48 Hours		72 Hours		96 Hours		Per Cent. Died	Per Cent. Lived
								D	L	D	L	D	L	D	L		
1	½ c.c.	8/ 3	5	1	1/100 c.c.	5	8/23	0	5	3	2	3	2	3	2	60	40
2	½ c.c.	8/12	4	2	1/100 c.c.	4	8/23	0	4	1	3	1	3	1	3	25	75
3	½ c.c.	8/22	5	1	1/100 c.c.	5*	8/23	1	4	1	4	1	4	1	4	20	80
Controls........		....	...	...	1/100 c.c.	4	8/23	0	4	1	3	2	2	2	2	50	50

* One sick.

TABLE 3.—RESULTS OF INOCULATIONS WITH STREPTOCOCCUS 23, OF LOW VIRULENCE

Lot No.	Amt. Typhoid Vaccine	Date	Lived	Died	Amt. Strep. Inoculated 24 Hr. Bouillon	No. Inoculated	Date	24 Hours		48 Hours		72 Hours		96 Hours		Per Cent. Died	Per Cent. Lived
								D	L	D	L	D	L	D	L		
1*	¼ c.c.	8/23	15	15	1/100 c.c.	12	8/31	0	12	6	6	7	5	7	5	58.3	41.7
2	½ c.c.	8/26	17	7	1/100 c.c.	12	8/31	1	11	2	10	2	10	2	10	16.6	83.4
3	½ c.c.	8/30	15	9	1/100 c.c.	12	8/31	3	9	4	8	4	8	4	8	33.3	66.6
Controls........		....	...	...	1/100 c.c.	12	8/31	3	9	4	8	4	8	4	8	33.3	66.6

* Small mice.

TABLE 4.—RESULTS OF INOCULATIONS WITH STREPTOCOCCUS 23, OF LOW VIRULENCE

Lot No.	Amt. Typhoid Vaccine	Date	Lived	Died	Amt. Strep. Inoculated 24 Hr. Bouillon	No. Inoculated	Date	24 Hours		48 Hours		72 Hours		Per Cent. Died	Per Cent. Lived
								D	L	D	L	D	L		
1	½ c.c.	9/ 9	20	16	1/100 c.c.	20	9/15	0	20	0	20	0	20	0	100
2	¼ c.c.	9/12	31	5	1/100 c.c.	21*	9/15	0	21	1	20	2	19	8.5	91.5
3	¼ c.c.	9/14	32	4	1/100 c.c.	20	9/15	0	20	0	20	0	20	0	100
Controls........		....	...	...	1/100 c.c.	20	9/15	1	19	3	17	4	16	20	80
					1/50 c.c.	6	9/15	2	4	3	3	3	3	50	50

* One sick.

TABLE 5.—RESULTS OF INOCULATIONS WITH STREPTOCOCCUS 23, OF HIGH VIRULENCE

Lot No.	Date Typhoid Inoc.	Amt. Strept. Inoc. 24 Hr. Bouillon Culture	Date	No. Inoculated	24 Hours		48 Hours		72 Hours		96 Hours		Per Cent. Died	Per Cent. Lived
					D	L	D	L	D	L	D	L		
1	8/23	1/500 000 c.c.	8/31	3	1	2	2	1	2	1	2	1	66.6	33.3
2	8/26	1/500 000 c.c.	8/31	5	2	3	4	1	5	0	5	0	100	0
3	8/30	1/500 000 c.c.	8/31	3	1	2	3	0	3	0	3	0	100	0
Control	....	1/500,000 c.c.	8/31	3	2	1	3	0	3	0	3	0	100	0

TABLE 6.—RESULTS OF INOCULATION WITH STREPTOCOCCUS 23, OF HIGH VIRULENCE

Lot No.	Date Typhoid Inoc.	Amt. Strept. Inoc. 24 Hr. Bouillon Culture	Date	No. Inoculated	24 Hours		48 Hours		72 Hours		Per Cent. Died	Per Cent. Lived
					D	L	D	L	D	L		
1	9/ 9											
2	9/12	1/1.000,000 c.c.	9/15	5	1	4	3	2	3	2	60	40
		1/2,000 000 c.c.	9/15	5	0	5	1	4	1	4	20	80
3	9/14	1/1,000,000 c.c.	9/15	6	1	5	4	2	5	1	83.3	16.6
		1/2,000,000 c.c.	9/15	6	0	6	2	4	3	3	50	50
Control	....	1/1,000,000 c.c.	9/15	5	2	3	4	1	5	0	100	0
		1/2,000,000 c.c.	9/15	5	1	4	1	4	1	4	20	80

0.01 c.c., and this was the dosage of low virulence adopted for the series of inoculations.

In order to get a broader view of the effect of typhoid vaccine on lowering the resistance, it was decided to have three series of mice, inoculated at intervals of several days, in each experiment.

Mice were inoculated subcutaneously with the standard triple typhoid lipovaccine used in all the camps. The dosage was sufficiently large to cause all the animals to be sick and quite a high proportion of them to die, the idea being to lower their resistance as much as possible. If proportionate dosage were given man it would amount to several hundred c.c., while the dosage actually given is only 1 c.c. Tables 2, 3 and 4 give the data and results of the experiments.

It is probable that under ordinary conditions it is the hemolytic streptococcus of relatively low virulence that is encountered in the camps. In those camps, however, in which more or less of an epidemic of streptococcus infection prevailed, the virulence of the streptococci probably was much increased.

With this in view, a part of the series of mice shown inoculated with typhoid vaccine in Tables 3 and 4 were inoculated with the same strain of streptococcus used for low virulence, which had been raised in virulence through mouse inoculation. Tables 5 and 6 give the data and results of these experiments.

COMMENT

In animal experiments, in which there are always uncontrollable factors to deal with, the only way any reliable results can be obtained is to repeat the experiment. If the same results are obtained consecutively, conclusions may then be fairly drawn. Results of the experiments as a whole should be considered rather than any individual portion, as there would be less chance of wrong deductions when the mass is considered. For example, in Table 3, comparing Series 1 with the controls, one could argue that there is increased susceptibility; comparing Series 2 and the controls, arguments for increased resistance could be brought forth; but taking the experiment as a whole, it will be found that there is practically no difference when Series 1, 2 and 3 are averaged against the controls; and this is without doubt more nearly the truth.

The number of typhoid vaccinated mice inoculated with low virulent streptococci were 111, of which twenty, or 18 per cent., died. Thirty-six control mice were inoculated with low virulent streptococci, of which ten, or 27.8 per cent, died. There is a difference here of 9.8 per cent. in favor of increased resistance to the streptococcus in the mice inoculated with typhoid vaccine. It may be possible, however, that the typhoid vaccine killed some of the mice most susceptible to the streptococcus and that this difference is more apparent than real.

Thirty-three typhoid vaccinated mice received inoculation of highly virulent streptococci, and of these twenty-two, or 66⅔ per cent., died. Thirteen control mice were inoculated, and nine, or 72 per cent., died. Here again there is a percentage in favor of increased resistance to the streptococcus, but it is possible that this difference may be more apparent than real.

There is one point, however, that may account for this apparent slight increase in resistance to the streptococcus. Following typhoid lipovaccination in man there is a moderate mobilization of leukocytes lasting for a few days. This undoubtedly occurs in animals, and it is generally thought that the leukocyte is the chief factor of defense against the streptococcus. *Another point that would favor the view that an increased resistance to the streptococcus follows inoculation with typhoid vaccine (one form of foreign protein) is Jobling's contention that there is a general immune reaction following the introduction of foreign protein.*

CONCLUSIONS

There is no evidence that there is increased susceptibility to streptococcus inoculation in mice following typhoid vaccination. There is a slight amount of evidence in favor of increased resistance to the streptococcus possibly due to the mobilization of the leukocytes. It is probable that these facts will be applicable to other vaccines and other diseases, for in a series of thirty-two mice vaccinated against pneumococcus, similar results have been obtained.

WAR NEUROSES, SHELL SHOCK AND NERVOUSNESS IN SOLDIERS *

PEARCE BAILEY, M.D. (New York)
Colonel, M. C., U. S. Army; Chief, Division of Neurology and Psychiatry, Surgeon-General's Office.
WASHINGTON, D. C.

A recent visit to France and England furnished me with opportunities for observing the various phases of war neuroses, shell shock and nervousness in soldiers. In France the patients were seen at *triages*, or sorting stations, field and army, and base hospitals. Those seen in England gave as a rule longer histories and were satisfactorily separated from the front by a stretch of salt water. In both countries, facilities for studying the different methods of treatment and management were made freely available to me, and I also was able to profit by the views of medical officers of long experience in these matters. The present article is a summary of the impressions gained from this visit

IMPORTANCE OF NEUROLOGIC SUPERVISION

The neurologic problems of war have assumed an importance quite undreamed of, and the necessity of neurologists for a modern army is receiving general recognition. In battle areas the need of neuropsychiatry exceeds that of general medicine, as the nervous and mental casualties may exceed 10 per cent. of the total casualties. France maintains 20,000 neurologic beds in the rear, most of which are occupied by functional cases, and at the front tries to maintain one and one-half neurologic beds for each thousand troops. Major Arthur Hurst, R. A. M. C., estimates that 26,000 beds are occupied each year in Great Britain by purely hysterical patients. The previously held neurologic conception that hysterical paralysis and contractures did not occur in conjunction with physical wounds has been completely overthrown, as the war has demonstrated that functional disturbances of this character complicate surgical injuries with frequency. The longer the war goes on, the more it becomes evident how widespread are the effects of functional nervous disease both in combatant troops and in patients hospitalized for any cause.

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* The cessation of hostilities and the proposed rapid demobilization of the Army have rendered many of the war time methods of the treatment of "shell shock" impracticable. This article should be read as of the time when it was written, that is, as of a time when no end of the war was in sight.

The web of mystery and vagueness that enveloped the entire shell shock group in the initial phases of the war has been swept away, and now there is an essential agreement of opinion that the great bulk of the cases are functional, that it is possible to prevent the occurrence of many of them, and that, even when of long standing and fully developed, they are curable. Actual experience has now shown that a substantial proportion of the nervous cases which appear at the front can be so managed that they do not run on into neurosis. The preventive measures are most sure of success in the battle areas, where they can be instituted almost immediately after the occurrence of the casualty. It is believed that from 80 to 90 per cent. of the patients of this class can be returned to the lines if they are promptly cared for in small neurologic units directly connected with the armies. The prevention of the cases that originate in the base hospitals is more difficult, but can be greatly furthered by a diagnostic alertness of medical officers on the lookout for the first manifestations of hysterical symptoms. It has also been proved that chronic, long standing cases, whether developed at the front or in base hospitals, can also be effectively cured, although the therapeutic arrangements for cases of this character are more elaborate.

It is thus seen that the outlook for the war neuroses is much brighter than it was. At one time it seemed impossible to stem the flood of these cases or to devise means of rehabilitating the patients. But in spite of this favorable change in the situation, shell shock still remains an actual as well as a potential problem for the medical department. Its potentiality can be held in check by efficient medical officers acting at the right time and place; but it will always be actual. There will always be many soldiers whose nervousness cannot be controlled at advanced points, either on account of the essential character of the nervousness itself or because, in the rush of warfare, it is impossible to carry out medical policies, desirable in themselves, but incompatible with the main object in hand.

In our army the task of the cure of the patients is difficult by reason of the sweeping application of the principle of compensation for disability. Article III, Section 300, W. R. I., Act of Oct. 6, 1917, as amended June 25, 1918, provides that officers and enlisted men or other members shall be taken to have been in sound condition when examined, accepted and enrolled for service, and thereafter entitled to compensation under the act for disability. Thus, as far as compensation is concerned, line of duty may be held to include all insanities, feeblemindedness, epilepsy, etc., irrespective of their having preexisted or not. Legally, no disorder can have preexisted in a person accepted for military service. As far as the neuroses are concerned, this law puts it beyond the power of medical officers to throw any doubts into the mind of the patient that he will surely be compensated if he persists in his neurosis long enough.

It is believed that the great success of the French with their neuroses is due to the fact that the neuroses are not pensionable and that no soldiers are discharged for such cause. The first factor is not available to us, but the second is; and for economic reasons alone every effort should be made to effect cures in neurotics, so that, even if they discontinue the service, they cannot claim disability on their return to civil life.

It was at one time thought that the doing away with the term "shell shock," with its implication of organic injury, which impresses the mind of the patient and the public alike, would help in the treatment. But it seems now as though the term had entered too deep into the language to be done away with. Efforts to offset the bad effects which the introduction of the expression brought with it will probably have to be expended in making it generally known that shell shock is an essentially curable condition.

CAUSATION

No entirely satisfactory explanation has been offered for the unprecedented frequency of these neuroses in this war. The great increase in the number and intensity of explosives does not altogether explain it, as they develop after gassing, after machine gun firing, and perhaps oftenest when there has been no direct exposure to firing at all. They develop in the base hospitals in France, and practically all of the symptoms quoted as war symptoms have been observed in the home cantonments during the training period. Neither does it seem probable that it is an entirely new development of this war, but rather that it existed in earlier wars in smaller numbers surely, and probably under a variety of names—in our Army, nostalgia, perhaps. Also in view of the fact that absenteeism as an idea has a foreplace in the minds of both officers and men whose sole reason for discharge is a war neurosis, it seems probable that among the 600,000 cases of absenteeism reported from the Union Army during the Civil War, an absenteeism which took the form of desertion or removal of patients from the medical services by friends or committees, there might have been found a numerous representation of modern shell shock.

The factor of predisposition is not to be denied in considering the causation of these conditions, but it is generally believed that it is sufficiently marked in most cases to have justified the rejection of the recruit.

With the exception of epilepsy, no single disease has been demonstrated as being an essential factor in causation. However, a diminished resistance may be inferred from the fact that the larger number of cases are observed during the first few months of service, although it must not be forgotten that there are a great many cases in which the soldier has not only given long service, but has also been distinguished for his morale and his bravery. It is not uncommon in French hospitals to see hysterical patients personally decorated and also wearing the *fourragère*.

Neuroses are credited with being more frequent in the infantry in common with other casualties, and also more common in trench warfare, although the latter has not been the case with our troops. The early impression that they were more common among officers has not been borne out by later experience. In a small proportion of the total number of cases the individual has been exposed to a traumatism severe enough to have caused lesions of the central nervous system without external wound. It is needless to state the uncertainty often surrounding the actual occurrence of injuries; but the injuries of the nervous system may be verified by definite signs. It is unfortunate that these relatively infrequent organic cases came to notice so early, as largely in consequence of them the idea became fixed that shell shock was an organic condition and so to be regarded quite differently from those functional conditions that are the result of suggestion and are curable by psychotherapy. There has been reproduced what happened when the nervous effects of railway accidents first came into prominence. The new name, the new circumstances, the malassortment of diverse clinical conditions into one group, and the permitting of the group to carry the stigma of the most serious cases, which were the least frequent, the failure to recognize the material motive as a powerful provoking and sustaining motive—all these circumstances combine to make the history of shell shock a repetition of the history of railway spine.

On the factor of exhaustion too much emphasis can hardly be laid. The break is often preceded by weeks of disturbed sleep, due to bombing and artillery fire, and during an advance the story is common of several days of excessive exertion, nervous strain, no sleep at all, exposure to cold, only cold food and but little of that. The wish to be out of the war, which all along may have been latent, comes more to the surface when the shaken soldier staggers to or is brought to the first aid station or when he emerges from a period of unconsciousness. Under the influence of food, rest and encouragement, this imperfectly formulated wish may sink back of itself or may require additional efforts on the part of the medical officer to make it recede. This period, this interval, is one of greatly exaggerated susceptibility, and during it the most trivial circumstance may petrify the idea of illness, and a way out by means of it. But it is also a period when the kind, firm and confident attitude of the medical officer may completely reassure the shocked man as to his ability to carry on again and inspire in him the firm intention to do so.

CLINICAL VARIETIES

After the elimination of all totally foreign conditions, such as mental disease, organic nervous disease, and endocrinopathies, the war neuroses may be roughly divided into three general classes, between which occurs the same overlapping as is seen in the neuroses in civil life. These classes are: A, concussions; B, neuroses of neurasthenic or psychasthenic type, and C, hysteria.

A. *Concussions.*—These justify the assumption of the existence of minute and more or less disseminated lesions of the central nervous system, and may be accompanied by such symptoms as unconsciousness lasting for several days, retention of urine, loss of knee jerk, blood in spinal fluid, paraplegia, etc. Some patients of this class recover perfectly within a few weeks; others do not recover satisfactorily, and still others develop the symptoms of neurosis, illustrating the relationship between organic and functional disease.

B. *Neuroses of Neurasthenic or Psychasthenic Type.*—These may develop as a result of concussions, but as a rule their origin cannot be connected directly with any physical injury. They differ in no essential particulars from the neuroses of civil life except that they carry a strong coloring of the war situation. Many of them are associated with symptoms suggestive of endocrine disturbance, and the thyroid picture, especially in gas cases, is much in evidence. Thus, in addition to the symptoms of fatigue, lack of confidence, phobias, compulsions and general hyperesthesia are observed rapid pulse, cardiac irritability, pain over the heart, vomiting, and terrifying dreams with war content.

C. *Hysteria.*—Babinski's conception of hysteria as a condition produced by suggestion and curable by psychotherapy has been of inestimable practical value at this time, not only in showing the correct management of hysteria *en masse,* but also in bringing to the light the frequency with which hysteria lays its crippling hand on conditions not primarily neurologic. A brief historical retrospect may help to an understanding of this subject, which has gained so much in importance during this war.

The creation of hysteria as a clinical entity must be credited to Charcot. He assembled old observations and made new ones, and left the picture of a characteristic disease with a definite symptomatology. He recognized the essentially suggestible nature of hysterics, but he did not define the origin of the suggestions, nor did he indicate the means by which they might be avoided. His influence was enormous, extending to teachers and authors of all nationalities, so that at his death hysteria was accepted, practically all over the world, as he had fashioned it. But he showed no practical way out.

For the past twenty years Babinski has been destroying the disease which Charcot created, leaving more or less to one side the personality of hysterics. He has shown that the classic symptoms of hysteria are the results of suggestion originating in medical examinations, or from misapplied medical or surgical treatment. As a proof of the correctness of his view, it is stated that the "grande hystérie" of the Salpêrière has now practically disappeared from the French clinics.

Babinski, like his illustrious predecessor, has exercised a great influence on the medical profession of France, and at the outbreak of the war it had practically adopted his view on hysteria. The advantage to France from this was that its medical officers were from the first in a position to realize how hysterical symptoms arise and how they can be cured.

Among the symptoms that may be mentioned as being produced by suggestion are deafness, blindness, mutism and deaf-mutism, tremors, contractures and paralyses. Some few of these, such as deafness and mutism, which are so closely connected in consciousness with states of terror and in which the original insult is in itself a powerful suggesting factor, come on immediately; but the development of the larger number is delayed for days or weeks during the period when the patients are particularly suggestible and are exposed to the suggestions of medical men who examine them, and to the suggesting example of other sick and wounded. It is at this period particularly that the wisdom and discretion of medical officers can accomplish so much in suppressing the tendencies to the development of disabling symptoms.

A particularly interesting condition, which has first received detailed attention during this war, is a peculiar form of contracture affecting arms and legs, especially the feet and hands, which develops in sequence to some minor surgical injury. In these cases, various trophic disturbances are added to the functional incapacity. The exact pathologic condition in these cases is still not clear, but most of the patients are curable under carefully prepared psychotherapy.

TREATMENT AND MANAGEMENT

General Considerations.—The importance of a definite understanding as to discharge and compensation has already been emphasized. If the contrary to what is known to be wise maintains, if it is accepted throughout the Army that functional nervous disease is a grave disability which, if persisted in long enough, will insure a separation from the service under favorable pension conditions, the task of medical officers will become exceedingly difficult; not only will they miss an effective argument in influencing the minds of their patients, but they themselves will be affected by the atmosphere which tends to foster invalidism and make it comfortable. Except at the very beginning, except during the period of suggestibility before symptoms of neurosis have shown themselves, the hospital atmosphere should not be made too attractive for these patients. The attitude of medical officers should be that they are there for the express purpose of ridding the patient of his neurosis and firmly intend to do it, and the hospital itself should be organized along lines of strict war discipline. A war neurosis is a personal reaction to a military situation, and it must be cured in terms of the situation. It is an infantile reaction, and the medical officer must call to his aid some of the resources of the schoolmaster. A hope of reward should spur on the patient who lends himself readily to treatment and does well, and there should be some suggestion of punishment for those who are refractory and who tend to relapse.

In the advanced French centers the patients, even those who have been subjected to violent concussions, are told that they will soon be well again, and that the furlough, to which every French patient discharged from hospital is entitled, will make their cure perfect. If, however, the patient does not respond to encouragement of this kind, a different tone is adopted, and he is told that patients who develop nervous symptoms get no furlough. It is difficult to be specific in these matters or to lay down general rules, but the general rule is that the longer the patient persists in keeping on the road that leads to neurosis the more uncomfortable he will find it. It would be well if every one could grasp this view of the matter and could realize that the more discipline is relaxed, the more the patients are permitted to believe that they are suffering from serious disorders, the more of them will be found in soldiers' homes after the war. Such public utterances as that of a member of parliament to the effect that no soldier who had suffered from this terrible affliction should ever be asked to bear arms in France again injures the morale of troops and tends to postpone recovery in patients who under proper conditions might soon be well.

The whole difficult subject of discipline receives a certain illumination from a consideration of a system of management employed at certain French centers and known under the name of *torpillage.* Torpillage consists in the brusque application of galvanic currents, strong enough to be extremely painful, in hysterical conditions, and the continuance of the procedure to the point at which the deaf hear, the dumb speak, or those who believe themselves incapable of moving certain groups of muscles are moving them freely. The method has proved highly effective, and requires but little time and practically no personnel except the medical officer who applies the treatment and the noncommissioned officer who takes the patient at the end of the treatment and continues the exercise of the affected parts. One treatment suffices. The apparatus is of the simplest, the only accessory to the electric supply and the electrodes consisting of an overhead trolley which carries the long connecting wires the whole length of the room, thus making the patient unable to run away from the current which is destined to cure him.

This method is more cruel in appearance than in fact, as the contacts are brief and only a few are necessary. What it really consists in is giving authority to a medical officer to inflict pain on a patient up to the point at which the patient yields up his neurosis. Its unquestioned effectiveness carries a lesson which makes plain that under circumstances a military neurosis disappears under punishment. It substantiates what was previously said in reference to rewards and punishment. As far as punishment is concerned, it should never be presented to the patient as such. It should rather be explained to him as a certain form of treatment which is of necessity not agreeable. The most feasible means for the carrying out of this idea is isolation. All of the French centers have isolating rooms, locked on the outside, into which refractory patients are placed and shut off from companionship, reading and writing materials and tobacco, until such time as they show themselves amenable to treatment. Rooms of this kind are especially necessary and effective in the management of relapses. As a matter of practical fact, the knowledge that isolating rooms are on hand and available is usually all that is necessary. They are not often used, and in one center they were found given over to the lodgment of attendants. But the underlying idea should make plain that a stubborn war neurosis is cured by the physician's mastering the patient. In many, but not in all, patients, persuasive measures are sufficient; but when they fail, disciplinary measures should be made available; and the very knowledge that they are available will render it rarely necessary to make use of them. It seems probable that the reason so little of this variety of persuasion can be made use of with officers is that the treatment of neuroses in officers is generally difficult.

At the Front.—The general plan of the treatment of these cases at the front has already been given. Nothing further need be added here except to report that Lieut.-Col. T. W. Salmon, senior consultant in neuropsychiatry, American Expeditionary Forces, has perfected and made operative comprehensive plans for the early treatment, in direct connection with the armies, which have worked great good to our troops.

In Base Sections.—If rehabilitation of the nervous soldier fails at the front, cure is inevitably delayed. During the days or weeks of his being transferred from one hospital to another, he not only fails to receive appropriate treatment, but is exposed to the suggestions of illness which deepen the roots of a beginning neurosis. In all bases treatment is slower and less certain of effecting a return to the fighting line. It has been shown to be necessary to have hospitals specially organized as to personnel, general equipment and surroundings. If such hospitals are located in France, it is still possible in fairly recent cases to return patients to their original duty after a few weeks of treatment.

If, however, the patients are returned overseas, the chances of returning them to foreign service again are not good. With soldiers of this class returned home, England enters into a kind of agreement or understanding that they shall not be ordered to France again for a period of six months. Practically it amounts to an understanding that they shall not go to France again for the period of the war. But even if soldiers suffering from the neuroses are not expected to rejoin their expeditionary comrades, once they have reached home there nevertheless should be no relaxation of the principles of management in the home hospitals. The same principles hold good that the most humane thing for nervous soldiers is to hold them in the military service until they are cured. At home it may be expected at least to reestablish them sufficiently to enable them to do some work useful to the army during the war, so that the end of the war will find them able to resume their civil occupations.

It is to be the policy of the medical department of the American Expeditionary Forces to retain all the patients of this class in France as far as possible. But it cannot retain all of them in France, and sufficient numbers of them will be returned to necessitate the establishment of one or more special hospitals in this country, which should be organized with great care. They should be remote from large cities and situated in a locality of which the climate will permit outdoor occupation for the greater part of the year. One thousand beds is the limit of size, as the atmosphere of cure, which they must have, is difficult to maintain in larger units.

Whenever it is possible, the commissioned personnel should have had expeditionary experience, as an actual knowledge of conditions in France will strengthen the influence of medical officers over their patients. Men or women nurses may be employed, but should be selected with special reference to their attitude toward the patients which facilitates cure. The patients should be kept as constantly occupied as possible, and the occupations (indoors) should be of useful character, such as basket making, tailoring, shoemaking, typewriting and carpentry. Agriculture is the best outdoor occupation. Occupations are to be considered as an essential part of the treatment; in addition to their moral benefit, they aid in restoring facility to parts that have been paralyzed or the seat of contractures. Physiotherapy should be instituted with the same end in view. Setting up exercises are to be carried out by an experienced noncommissioned officer, and ladders, steps, bars, walking floors, etc., are to be arranged to overcome the effects of any local disabilities.

The principle behind all the procedures of physiotherapy should be that the patient is made to do them for himself as quickly as possible. He should be put on his own initiative, and overseen rather than watched. Massage, electricity and hydrotherapy have little part in the treatment. Massage has a place in case of atrophy, but as a general practice it is opposed to the main principle, which is that the patient is to prove to himself that he can do the things which he thought he could not do. Massage is opposed to that principle.

The classification of cases, to be made in the receiving ward, is extremely important. Neurasthenics and psychasthenics should be separated from the patients with local hysterical symptoms, as the methods for these two classes is different. Also, at the time of reception, an effort should be made to ascertain the general morale of the patient. Many show evidences of ill nature and resentment and come to the hospital with their minds made up that they will not be cured. Such are usually easy of identification, most betraying their intentions by malicious glances of the eye. If allowed to associate freely with well intentioned patients they are apt to corrupt the general morale of the ward.

As far as the treatment of the cases of actual concussion which have developed into neurosis, and the neurasthenic and psychasthenic cases are concerned, there is little new to be said. The treatment is that of the psychoneuroses in general with special reference to the military situation. Among the symptoms common to this class are insomnia, war dreams, vomiting, pains in the head and precordial pains. Stammering is often found in this class, and is reported as difficult to deal with. Cases with hysterical manifestations, such as aphonia, coarse tremors, paralysis and contractures require quite a different management. Such patients are to be given to understand, on reaching the hospital, if possible before reaching the hospital, that they have come there to be *cured,* and that they certainly will be cured at one sitting. This is the great practical demonstration of the war in psychotherapy, that hysterical conditions can be cured almost instantaneously, when proper arrangements have been made, even if the condition has lasted for years. The idea of a cure, of a crisis, seems to be the crux of the matter. It does away with the hospital idea of "care and treatment," and fixes a definite moment when the crippling effects of illness will disappear as quickly as though they had been cut away with a knife. The more completely the preparations are carried out to make the idea forceful, the more certain will the effects be.

There must be some air of magic about the performance. Examinations at this point are better brief, and if the diagnosis has already been established, would better be omitted altogether. Often the patients have already been examined too much. Elaborate history taking is also superfluous, as an intimate knowledge of the patient's case is not necessary before the cure, and is better obtained during conversations while the cure is being effected. The cure itself is effected by means of suggestion and persuasion, various methods being employed with equal success by different operators.

In all, with the exception of *torpillage,* the patient is put at his ease, assured that he will suffer no pain, made to relax, and in some way or other made to move the part that is paralyzed or contracted, made to speak, to hear, to cease tremors. Most operators avail themselves of a mild faradic battery to emphasize their suggestions; others use no artificial means at all. The time required for the cure varies from a few minutes to a few hours to all day and night. The principle is that once the physician has shut himself up with the patient he shall not leave him until the object is achieved.

PREPARATORY SUPERVISION AND AFTER-TREATMENT

Quite as essential as the cure itself is the period that precedes it and the period that follows it.

The first, the period of preparation, should be utilized to prepare the patient's mind for a favorable reception of the suggestions that are to cure him. With this end in view he is not treated immediately on arrival at the hospital, but is made to wait several days during which nurses, attendants and patients who have been cured tell him of the certainty of cure and its painlessness. In the treatment room of the Salins hospital there is a large pile of canes, crutches and orthopedic apparatus that have been discarded by cured patients, a pile well calculated to strengthen the faith of the doubting.

The period after the cure is devoted to careful supervision of the patient to the end that he keeps doing the things which a short time before he thought himself unable to do. A sharp lookout should be kept for relapses, and relapses should be dealt with with promptness and firmness. Military drills should be begun as quickly as possible, but the most satisfactory arrangement for a postgraduate course is a special training camp under the command of a line officer. Under present regulations a patient discharged from a hospital goes to a replacement depot without having been tried out under service conditions. But neurotics are too uncertain equations to be passed on without having first proved themselves. Unless fortified by an actual trial of the capacities of the patient, the decisions of classifying boards are apt to be erroneous.

Some explanation must be given as to the significance of cures and relapses. Cure means the disappearance of the symptoms that were created by suggestion and made to disappear by psychotherapy. Cure removes what was produced by a situation without any particular attempt to determine the mechanism of the production. It is quick and pragmatic and adapted to be applied to large numbers, as opposed to being time-consuming and analytic and individualistic. Those who favor the analytic school of mental medicine will doubtless deny, and with some reason, that the disappearance of one or more hysterical symptoms is proof of the cure of the patient. But to this may be answered that the cure of the patient begins with the removal of the obstacle that immediately prevented him from performing his duties. If, on such a removal, he is able to resume duties that tend to build up character quite as much as the explanations furnished by psychanalysis, he may be said to be practically cured.

The fact is that many patients treated in this way are able to carry on again. Roussy of Salins sends a goodly proportion of his patients back to the line in spite of the fact that most of them have been crippled for months or years. He is aided greatly by the training camp and also by the authority given him of recommending a change of service when he considers such a change necessary. For example, he often returns infantrymen to the artillery.

Relapses consist in a return of the symptoms in a patient once cured. The tendency to them is common, especially when the patient is removed from the care of the medical officer who effected the cure. Patients relapsing should be returned as soon as possible to the place of the original treatment, to the same medical officer, and as relapses are indicative of a bad morale on the part of the patient, of an unwillingness to profit by what he has learned, strict and if necessary disciplinary measures should be used.

New and Nonofficial Remedies

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application. W. A. Puckner, Secretary.

BENZYL BENZOATE.—Benzylis Benzoas.—$C_6H_5COO.C_6H_5CH_2$.—The benzyl alcohol ester of benzoic acid. It contains not less than 95 per cent. benzyl benzoate.

Actions and Uses.—Benzyl benzoate lowers the tone of unstriped muscle, and has been suggested as a remedy against renal, biliary, uterine, and intestinal colic and other spasms of smooth muscle, including angiospasm. Its clinical use is still in the experimental stage.

Dosage.—0.3 to 0.5 Cc. (5 to 7 minims).

Benzyl benzoate is a colorless oily liquid above about 20 C. It is odorless, or has a faint aromatic odor, and a sharp burning taste. It is insoluble in water or glycerin but miscible in all proportions with alcohol, chloroform and ether.

Benzyl benzoate boils at 340 to 350 C. with partial decomposition. When ignited it burns with a very smoky flame.

Specific gravity 1.09 to 1.13 at 15 C., 1.083 to 1.122 at 25 C.

Benzyl benzoate is neutral to litmus. It is readily saponified by alcoholic solution of potassium hydroxide. The solution obtained when neutralized yields a flesh-colored precipitate with ferric chloride solution, and upon acidulation a white crystalline precipitate of benzoic acid separates. This precipitate may be identified by extracting with ether and applying the usual tests for benzoic acid.

Ten Cc. benzyl benzoate should leave no weighable residue upon evaporation and heating until all carbon is burned away. To about 2 Gm. benzyl benzoate, accurately weighed, add 25 Cc. half-normal alcoholic potassium hydroxide solution and heat the mixture to incipient boiling under a reflux condenser for one hour. To the cooled solution add phenolphthalein and titrate the excess potassium hydroxide with half-normal hydrochloric acid. The volume of half-normal potassium hydroxide used should indicate not less than 95 per cent. benzyl benzoate (each Gm. benzyl benzoate requires for saponification not less than 8.9 Cc. or more than 9.4 Cc. half-normal alcoholic potassium hydroxide solution).

Benzyl Benzoate-H. W. and D.—A non-proprietary brand of benzyl benzoate complying with the tests and standards for benzyl benzoate.

Manufactured by Hynson, Westcott and Dunning, Baltimore, Md.

Solution of Benzyl Benzoate, Miscible-H. W. and D.—A solution of 20 Gm. benzyl benzoate in 78 Gm. ethyl alcohol to which is added 2 Gm. of powdered castile soap as an emulsifying agent.

Actions and Uses.—Same as benzyl benzoate.

Dosage.—1.5 to 2 Cc. (20 to 30 minims).

BARBITAL.—Diethyl-barbituric Acid.—Acidum Diaethyl-Barbituricum.—Diethyl Malonyl Urea.—Malo-Urea.—2,4,6,-trioxy-5-diethyl pyrimidin, $CO(NH-CO)_2C(C_2H_5)_2$. First introduced as veronal.

Actions, Uses, Dosage, Physical and Chemical Properties.—See New and Nonofficial Remedies, 1918, p. 95.

Diethylbarbituric Acid-Merck.—A brand of barbital complying with the N. N. R. standards.

Merck & Co., New York, distributors.

Diethylbarbituric Acid-Merck Tablets, 5 grains.—Each tablet contains diethylbarbituric acid-Merck, 5 grains.

BARBITAL SODIUM.—Sodium Diethyl-Barbiturate.—Sodii Diaethylbarbituras.—$Na(C_8H_{11}O_3N_2)$.—The monosodium salt of barbital (diethyl-barbituric acid).

Actions, Uses, Dosage, Physical and Chemical Properties.—See New and Nonofficial Remedies, 1918, p. 96.

Sodium Diethylbarbituric Acid-Merck.—A brand of barbital sodium complying with the N. N. R. standards.

Merck & Co., New York, distributors.

Sodium Diethylbarbituric Acid-Merck Tablets, 5 grains.—Each tablet contains sodium diethylbarbituric acid-Merck, 5 grains.

Fat Embolism as Factor in Traumatic Shock.—According to an abstract in the *Nederlandsch Tijdschrift*, H. Siegmund has reported that he found evidences of fat embolism in the lungs at necropsy after wounds with much shattering of bone or injury to soft parts. When there had been phenomena of shock, the fat embolism was the most pronounced and extensive, amply sufficient to explain the fatal outcome. In the prolonged cases the fat embolism involved the brain or was general.

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SATURDAY, DECEMBER 28, 1918

The year 1918 has gone: a year momentous as the termination of the most cruel war in the annals of the human race; a year which marked the end, at least for a time, of man's destruction of man; unfortunately a year in which developed a most fatal infectious disease causing the death of hundreds of thousands of human beings. Medical science for four and one-half years devoted itself to putting men on the firing line and keeping them there. Now it must turn with its whole might to combating the greatest enemy of all—infectious diseases. In this battle there must be no armistice; no peace without victory. Here's wishing every member of The Journal family continuous courage in the glorious struggle, with victory succeeding victory, and to all a Happy and Prosperous New Year.

IS INFLUENZA DUE TO A FILTRABLE VIRUS?

The primary cause of influenza, in accordance with the facts as we now have them, is an unknown agent that prepares the way for secondary infections of the respiratory tract. Is this unknown agent a filtrable virus? The results of experiments just reported to the Academy of Sciences at Paris appear to indicate that it is. Nicolle and Le Bailly[1] inoculated monkeys (*M. cynomolgus*) with the bronchial secretions of patients in the early stages of typical influenza. One monkey, which received the unfiltered secretions under the conjunctiva near the papilla and into the nose, came down on the sixth day with a fever that lasted three days. The same secretion, diluted ten times with salt solution and filtered through a Chamberland candle (L 2) under a pressure of from 30 to 40 cm. of mercury, was injected subcutaneously into a healthy man, who fell sick on the sixth day with headache and general malaise, conjunctival injection and moderate fever, recovering after five or six days. The filtered material was also injected intravenously into a second person, but he remained well. Cultures of the filtrate remained sterile, showing that it was free from ordinary bacteria. A healthy man was injected subcutaneously with 3 c.c. of the blood of the monkey taken on the first day of the fever, but without any results. In another experiment, 3 c.c. of blood drawn on the second day of the characteristic attack of influenza were injected into a vein of a healthy person without any apparent result. Again, bronchial secretion obtained on the third day of the attack from a man suffering with influenza was injected under the conjunctiva and placed on the nasal mucous membrane of a monkey, and on the fifth day the animal developed a fever that lasted three days; after filtration the material was injected under the skin of a healthy person, who became ill on the sixth day with the symptoms of a mild attack of influenza. Intravenous injection of the filtrate into a healthy man produced no result. That the persons who came down with symptoms of influenza after having been inoculated subcutaneously with these filtrates did not suffer from the natural disease is indicated by the fact that they occupied particular quarters with other persons, none of whom became sick, and also because none of these inoculated became sick subsequently. From their results, Nicolle and Le Bailly conclude that the bronchial secretion in the acute period of influenza is virulent; that the monkey is susceptible to the virus by way of the subconjunctival tissues and the nasal mucosa, and that the virus is filtrable because sterile filtrate injected subcutaneously seemed to produce the disease in two persons. They failed to produce the disease by intravenous inoculations, which might be interpreted to mean that the virus does not survive in the blood.

However, an experiment reported by Dugarric de la Rivière[2] seems to show that the virus may be present in the blood. He mixed the blood from four persons who were severely ill with influenza, passed it through a Chamberland candle (L 3), and besides injecting rabbits, injected himself under the skin with 4 c.c. of the filtered blood. Nothing further is said at this time concerning the injections of the rabbits. Concerning the experiment on himself, however, he reports that there was no local reaction, but that on the third and fourth days after the injection he had marked frontal headache, pain in the neck and back, chilly sensations and weakness, and a temperature running between 37.8 and 38.2 C. (100.04 and 100.76 F.); on the fifth day the symptoms subsided except for some weakness and also some intermittent precordial pain and irregularity of the pulse. On the tenth day he swabbed his throat and nose thoroughly with a filtrate of an emulsion of influenza sputum in salt solution, but this was not followed by the development of any symptoms.

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[1] Nicolle, Charles, and Le Bailly, Charles: Quelques notions expérimentales sur le virus de la grippe, Compt. rend. Acad. d. sc., 1918, **167**, 607.

[2] Dugarric de la Rivière, R.: La grippe, est-elle une maladie à virus filtrans? Compt. rend. Acad. d. sc., 1918, **167**, 606.

The results of the work of these French investigators are, of course, most interesting and suggestive as indicating that this disease is caused by a filtrable virus. However, in view of the small number of experiments and the fact that the spontaneous development of influenza cannot be entirely excluded, they can hardly be accepted as demonstrating conclusively that influenza is caused by a filtrable virus. The reports of further investigations must be awaited.

GOITER PROPHYLAXIS IN SCHOOLGIRLS

The high incidence of simple goiter in various regions of the United States as well as in other parts of the world is beginning to be appreciated. Since goiter develops particularly during the adolescent period, the most valuable and accurate data as to its occurrence can probably be obtained from the examination of the public school population. Only beginnings have been undertaken in this direction; but the widespread employment of school physicians and the introduction of modern methods of school medical inspection and personal prophylaxis will make a vigorous attack on the goiter problem more promising in the near future. In a complete census of the condition of the thyroid gland in the girls from the fifth to the twelfth grades of the school population of a large community in the Great Lakes goiter district, it was found that 1,688, or 43.59 per cent., had normal thyroids; 2,184, or 56.41 per cent., had enlarged thyroids, and 594, or 13.4 per cent., had well-defined, persistent thyroglossal stalks. The community lies near the southern edge of the goiter district, and it is suggested that communities near the lakes would show a higher incidence. This demonstration of the extent of goiter occurrence, the outcome of a study made under the auspices of the Committee on Therapeutic Research of the Council on Pharmacy and Chemistry of the American Medical Association by Marine and Kimball[1] of Cleveland, ought to pave the way for successful therapy on a large scale.

If we accept the dictum of the Cleveland investigators that "simple goiter is probably the easiest of all known diseases to prevent," it follows that efforts to undertake prophylactic work should be initiated without delay. To offset the possible hesitation of the want-to-be-shown members of the profession, an actual therapeutic demonstration on a large scale has already been carried to a point at which the results achieved are both striking and convincing.[2] For the prophylactic treatment, sodium iodid was selected on the grounds of economy and ease of administration. The thyroid gland has an extraordinary affinity for iodin; and an exceedingly small amount of this element suffices, as numerous experiments have clearly demonstrated, to protect a gland against hyperplasia even under conditions in which such a development would otherwise be a characteristic compensatory response to thyroidal deficiencies. In their large project at Akron, Ohio, where Marine and Kimball made the survey of the incidence and the types of thyroid enlargement in the schoolgirls from the fifth to the twelfth grades, inclusive, the dose of iodid selected was small in comparison with customary iodin therapy, but large in contrast with what animal experiments suggest as needful. The evidence indicates that from 25 to 30 mg. "saturate" the normal thyroid of from 20 to 25 gm. (⅔ to 1 ounce). Marine and Kimball arbitrarily selected the employment of 2 gm. of sodium iodid, given in 0.2 gm. doses each school day, for each pupil in the fifth, sixth, seventh and eighth grades; and 4 gm. in 0.4 gm. doses each school day for each pupil in the ninth, tenth, eleventh and twelfth grades. These amounts of the drug were given in May, 1917, at the schools by the teachers or nurses.

A complete reexamination of all girls from the fifth to the twelfth grades was made six months later. The summarized results[2] show that not a single pupil in whom the thyroid was normal at first and who took iodin showed any enlargement, while of those not taking iodin, 26 per cent. showed definitely enlarged thyroids, and some, moderately large goiters. Even more than a prophylactic action is shown in the results: Just one third of the goiters marked "small goiters" disappeared; and one third of those marked "moderate goiters" showed a decrease of 2 cm. or more. Accordingly, the investigators properly remark, a distinct therapeutic effect is clearly demonstrated.

These statistical findings are the more conclusive because they represent not dozens but hundreds of carefully examined cases. More than a thousand girls took the full treatment, the latter being restricted for the present to this sex because during the adolescent period simple goiter occurs about six times more frequently in girls than in boys. The iodid rash prophesied by some critics failed to materialize in any noticeable way in more than five girls, in whom it was transitory and uneventful, promptly clearing up when the treatment was stopped. The investigators also now give assurance that there is no danger of producing a toxic condition like exophthalmic goiter. Not a single symptom of this alleged danger from the use of iodids was encountered. Nor was anything different to be expected; for, as Marine and Kimball remind us, the risk of inducing manifestations of exophthalmic goiter from the use of iodin in physiologic doses is exceedingly small, even in those cases in which there were large hyperplastic thyroids, that is, the kind of thyroid enlargement that would permit of the most rapid formation and excretion of the iodin-containing hormone. The extent to which iodids are used in general medicine and surgery and the rarity of the development of signs of exophthalmic goiter is the best index of the danger. Iodin is usually employed in immensely large doses; from 0.2 to 0.4 gm. of sodium iodid daily for two weeks would offer a great excess over the amounts necessary to saturate even the largest thyroids, and probably much smaller amounts would suffice in man, as it has been proved to do in the lower animals. The Akron experiment is being continued on an even larger scale. It should serve both as a model and as a stimulus for comparable efforts elsewhere.

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[1] Marine, David, and Kimball, O. P.: The Prevention of Simple Goiter in Man, Jour. Lab. and Clin. Med., 1917, 3, 40.

[2] Kimball, O. P., and Marine, David: The Prevention of Simple Goiter in Man, Arch. Int. Med., July, 1918, p. 41.

ANTISCORBUTICS

The justification for a careful consideration of the subject of antiscorbutic agents is presented by the recent studies of experimental scurvy.[1] McCollum[2] remarked recently in a symposium on diseases due to deficiencies in nutrition:

> Recovery from scurvy following a change of diet, or an improvement of the bacteriologic condition of the food, or following the administration of substances having diuretic properties, may be more satisfactorily explained in other ways than by the assumption that such changes in the dietary regimen produce their effects because of the introduction of a hypothetic antiscorbutic substance. It is necessary, henceforth, that those who discuss the etiology of scurvy should take into consideration the results of recent researches in nutrition with simplified diets. Whoever would seek to establish the validity of the theory of the existence of a specific antiscorbutic substance should first furnish new explanations for the experimental results that are not in harmony with the antiscorbutic theory, rather than present new experiments that harmonize with this most attractive hypothesis.

Nevertheless, at the present moment—and who can foretell the future in these days of enormous progress in the knowledge of the science of nutrition—it seems clear from the available evidence[1] that certain species at least may show scorbutic symptoms despite the fact that they are on a regimen that seems to meet the requirements of present-day investigators. For example, both Cohen and Mendel[3] at Yale, and Hess and Unger[4] at the Department of Health in New York, have recently demonstrated the genesis of disease in guinea-pigs abundantly supplied with food that contained admittedly good protein, a liberal variety of inorganic salts, supplements of sources of the recognized "fat-soluble" and "water-soluble" vitamins, and the roughage to regulate the movement of the bowels.

Small additions of raw milk do not prevent the onset of scurvy. Larger quantities cause the symptoms to disappear. But the long recognized source of antiscorbutics is found in the fresh fruits and vegetables. Precisely how their potency manifests itself need not concern us here. The fact that scurvy has not only a civil but also a military significance at this time is of itself enough occasion to search for dietary possibilities that will assist in averting or curing the disease. When we are told by competent observers that prunes and bananas are not antiscorbutic, whereas oranges and cabbages are markedly effective, it becomes clear that no broad generalizations can be made, nor can haphazard choice be expected to lead to antiscorbutic dietary success. Assuredly there is need, as Hess remarks, not only of an exact inventory of antiscorbutic foodstuffs, such as has been recently undertaken by the Lister Institute in London,[5] but also of efforts directed to enlarge their number.

Even this plan now seems inadequate to meet the current situation. The movement toward conservation of foods, particularly exemplified in the drying and preserving of fruits and vegetables, is likely to be an extensive one. Do these foods thus conserved retain their antiscorbutic potency? According to Hess and Unger,[4] commercial dehydrated carrots retain practically no antiscorbutic virtues. This statement is in accord with the findings of various European experimenters. Cohen and Mendel have modified the general statement by indicating that cabbage, which is markedly antiscorbutic, apparently may be dried so as to retain some, at least, of its potency. Even orange juice, the antiscorbutic *par excellence,* has been found to lose some of its power when allowed to age for some months in a refrigerator; and the "artificial orange juice" of salts, sugar and citric acid, as proposed by McCollum, is said to fail to protect against scurvy.[4] From a practical standpoint, in the face of high prices for foods, it seems worth while to reemphasize Hess' discovery that orange peel possesses marked antiscorbutic potency and withstands desiccation remarkably well, retaining considerable of this power after being dried for three months.

Some day, we may confidently expect to discover some order in the apparent chaos of this subject. Meanwhile the safety of large groups of the human race demands accurate information on matters that seem to offer at best crudely empiric knowledge. To say that any food lacks antiscorbutic potency is not to condemn it or exclude it from the dietary. The foremost warning is, not to make our rations too exclusive in character, not to depend as yet solely on dried or preserved products, but rather to include some fresh foods as far as circumstances permit—until the experts either improve the methods of conservation so as to retain antiscorbutic potency in them or give us a guide to physiologic safey in our dietary choices.

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[1] The Nonidentity of Antineuritic and Antiscorbuitc Factors in Nutrition, editorial, The Journal A. M. A., Nov. 30, 1918, p. 1826; Scurvy and Antiscorbutics, Dec. 14, 1918, p. 2000; Scurvy and Constipation, Dec. 21, 1918, p. 2075.

[2] McCollum, E. V.: The "Vitamin" Hypothesis and the Diseases Referable to Faulty Diet, The Journal A. M. A., Sept. 21, 1918, p. 937.

[3] Cohen, B., and Mendel, L. B.: Experimental Scurvy of the Guinea-Pig in Relation to the Diet, Jour. Biol. Chem., 1918, **35**, 425.

[4] Hess, A. F., and Unger L. J.: The Scurvy of Guinea-Pigs, II, Experiments on the Effect of the Addition of Fruits and Vegetables to the Dietary, Jour. Biol. Chem., 1918, **35**, 487.

[5] Chick, T., and Hume, M.: Tr. Soc. Trop. Med. and Hyg., 1917, **10**, 141.

Current Comment

LEST YOU FORGET

Last week opportunity was given to Fellows of the Association and to subscribers to remit annual dues and subscription, using a blue slip inserted in THE JOURNAL. Many, desirous to aid the Association in effecting a great saving in the sending of regular bills, have already responded. It is hoped that many more will require no further reminder to act. Lest you forget we say it yet: Use the Blue Slip.

THE NUTRITIVE VALUE OF THE BANANA

A prominent organization for conserving the health of the less well-to-do classes has adopted the dictum, "Spend not more for meat and eggs together than for vegetables and fruits."[1] The part that meat and eggs play in the dietary is well known. They offer proteins and fats in acceptable form, and the egg furnishes a quota of vitamins in addition. The grouping of vegetables and fruits in a promiscuous way may tend to obscure the great differences that exist between the different, highly unlike classes of such plant products. Roots, tubers, stalks, green leaves and fruits proper are too diverse in their botanic morphology as well as their chemical make-up to receive indiscriminate consideration in the eyes of the dietitian. All of the products mentioned may provide pleasant and varied flavors and may give desirable texture or bulk to the diet. Some of them undoubtedly furnish vitamins, though it must be admitted that our knowledge of the distribution of these factors is still most fragmentary. As a rule, however, they supply acceptable carbohydrates in the form of starch and sugars. Thanks to the more recent methods of physiologic investigation of dietary values, a new physiology of foods is being created. This has emancipated the student of nutrition from the generalities of former days and enabled him to form more useful conceptions of the specific values of individual products. Numerous instances of what this mode of examination may reveal have been detailed from time to time in THE JOURNAL. An added illustration is afforded by the recent studies of the nutritive value of the banana by Sugiura and Benedict.[2] They refute the assumption that a population can subsist exclusively on bananas as food.[3] These fruits are now definitely demonstrated to be deficient in protein and the water-soluble accessory as a food for the growth and maintenance of experimental animals. The lacking factors must be supplied before a complete dietary results. These shortcomings need not detract, however, from the other nutrient virtue of this sterile fruit.[4] It remains a delicious and digestible sugary food even if it lacks all the virtues of an ideal product like milk.

THE AWE-INSPIRING UNKNOWN

In few places does familiarity breed greater contempt than in the field of therapeutics. None know this better than the exploiters of nostrums—whether for physicians' prescription or for direct consumption by the public. This thought is inspired by reading the label of a proprietary brand of clay poultice which informs the world that the base of this marvel is "composed of the finest anhydrous and levigated argillaceous mineral." It would be fatal, commercially speaking of course, to tell the public what it could, but probably will not, easily find out by looking in the dictionary, that this specimen of exuberant verbosity simply means that the base of the product is nothing more miraculous than dried and finely powdered clay. But how much more sonorous, how much more awe-inspiring, how much more suggestive of incantations and the witch-caldron: "anhydrous and levigated argillaceous mineral." One cannot help feeling that "Prof." Samuels, the shrewd and genial quack who dispensed a pinch each of salt and sugar in hydrant water ($5.00 for 2 oz.), made a mistake in not taking the public into his confidence ("patent medicinally" speaking), by telling them the composition of his panacea. With perfect truth he might have said, for instance:

> "My preparation is composed of minimal quantities of a member of the disaccharid carbohydrates, derived from the hexoses and capable of yielding two hexose molecules by hydrolysis, having as a general formula $C_{12}H_{22}O_{11}$, and crystalizing in monoclinic prisms, together with an interesting chemical combination of natrium and chlorin, which, in its natural state, forms anhydrous, cubical or octahedral white crystals. These are dissolved in a colorless, limpid fluid compounded of hydrogen and oxygen."

Thus might Samuels, taking a leaf out of the notebook of the clay-poultice exploiters, have avoided the charge that he was unwilling to let the public know what he was selling. He might, conceivably, have impressed physicians of a certain type! A seeming frankness is the order of the day in advertising "patent medicines"; does not the public know, full well, that the base of the wonder-working poultice is "anhydrous and levigated argillaceous mineral"? What more can it ask?

BRAIN ANALYSIS IN PATHOLOGY

The chemical pathology of the brain can lay claim to few facts that have been established by adequate data from suitable material. Even in the case of the normal brain, the number of analytic chemical studies conducted in recent years with approved methods has been woefully small. Hence the basis for comparisons of the conditions found in health and disease remains for the most part to be more firmly established. Through the untimely death of Waldemar Koch, at Chicago a few years ago, science lost one of its most promising workers in this domain. Recognizing the paucity of contributions to our knowledge of the chemical composition of the human brain, we need not hesitate to evaluate at some worth the contributions that the more lowly animals may offer. Koch and Riddle have made a chemical study of the brains of pigeons having a functional abnormality recognized as a lack of control of the voluntary movements.[1] The derangement, which usually persists until death, first appeared in these birds under conditions known to lead to weakness in the offspring. The disorder is exhibited in all degrees and has been inherited undiminished to the fifth generation. Usually it is shown from the earliest age, and is probably present throughout the whole development of the bird. Without giving the minutiae of the elaborate analyses made, it has been found that the brains of the ataxic individuals differed clearly from those of normal pigeons. The results of the analyses of the affected brains are interpreted as suggesting a chemical underdifferentiation or immaturity of these brains. The brains of affected birds of approximately mature age are chemically more like the brain at earlier stages of development. Although few opportunities for comparison are as yet available, the chemical variations from the normal as observed in the ataxic pigeon brains and in human amaurotic dementia are apparently alike in kind.

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[1] Food and the War, a textbook prepared under the direction of the Collegiate Section of the U. S. Food Administration, Boston, Houghton, Mifflin Company, 1918, p. 203.

[2] Sugiura, K., and Benedict, S. R.: The Nutritive Value of the Banana, Jour. Biol. Chem., 1918, **36**, 171.

[3] Adams, F. V.: Conquest of the Tropics, 1914, p. 530.

[4] The Undervalued Banana, editorial, THE JOURNAL A. M. A., Jan. 27, 1912, p. 276. Prescott, S. C.: Scient. Month., 1918, **6**, 65. Myers, V. C., and Rose, A. R.: The Nutritional Value of the Banana, THE JOURNAL A. M. A., April 7, 1917, p. 1022.

Medical Mobilization and the War

Personnel of the Medical Corps

For the week ending December 20, there were in the Medical Corps 30,047 officers, a decrease of 998 since the previous week. This personnel includes four major-generals, five brigadier-generals, 221 colonels, 509 lieutenant-colonels, 2,454 majors, 9,771 captains and 17,083 lieutenants. There were in active service 29,232, a decrease of 990 since the previous week. Discharges to date include 4,240 officers.

The Association of the Medical Veterans of the World War

To Commissioned Officers in the Medical Corps of the United States Army, United States Navy, United States Public Health Service, and Medical Members of the Boards of the Selective Service System:

There has been incorporated and officered, the Association of Medical Veterans of the World War, with headquarters in Washington, D. C.

All physicians and surgeons commissioned in the Medical Reserve Corps, or Medical Corps of the United States Army, United States Navy, United States Public Health Service, medical members and medical examiners of Local, Medical Advisory and District Boards officially appointed by the President, or by the governors of states, may become active members by signing the proper application and paying the nominal sum of $1.

The Association of Medical Veterans of the World War is for the purpose of perpetuating fellowships formed in the military service of the United States, 1914 to 1918; promoting reunions of medical veterans; providing a common point of contact for organizations of medical men already founded or to be later instituted, who took official part in winning the world war; for advancing medical science among its members, and for protecting those in need, through declining years.

It is expected that this organization may become the medium of association with foreign societies of medical war veterans, to the end that the medical profession of nations may continue to be allied, in harmony with the governments that made common cause and secured a common victory.

Special associations of medical war veterans, with membership restricted to states, to the selective service, specialists in medicine, overseas service, etc., are invited to elect delegates to represent them in the house of representatives, to which the government of the Medical Veterans of the World War will be entrusted, through the board of directors, to be elected by this house of representatives.

The first convention of the Medical Veterans of the World War, to be held in Atlantic City, N. J., during the second week in June, 1919, will be the Victory Meeting, at which the affairs of the association will be placed in the hands of its officers, to be elected at that time.

Physicians who are qualified by service in either of the Medical Corps of United States government or because of having served by appointment as a member of one of the boards under the selective service system, are requested to submit applications for membership, stating the branch of service in which they have been engaged, together with their membership fee ($1), to the secretary of the association, Col. Frederick F. Russell, care of the Office of the Surgeon-General of the Army, Washington, D. C.

Frederick F. Russell, M.D., Washington, D. C.
Colonel, M. C., U. S. Army.

Weekly Bulletin A. E. F.

Nov. 25, 1918

This bulletin begins with a discussion of the current epidemic of respiratory diseases with extracts from newspapers showing recrudescences occurring in Germany, Hungary, Holland, Switzerland and Portugal. In Portugal the epidemic seemed particularly virulent, many patients dying within forty-eight hours. A statement by the Director-General of Sanitation indicates that some 25,000 people had already died, and that an average of 300 daily were dying in Lisbon. The height of the epidemic in the American Expeditionary Forces was reached in the week ending October 27. From June 15 to November 8 there had been 78,713 cases of influenza and 11,165 cases of pneumonia complicating influenza with 191 deaths attributed directly to influenza and 4,754 deaths from pneumonia. The mortality from influenza, it is stated, cannot be figured with any degree of accuracy on account of the large number of pneumonia cases reported as secondary to influenza. The final paragraph on this subject states:

> Field Hospital No. 366, 92d Division, used sheet cubicle system about beds and masks for patients and attendants so consistently and thoroughly that none of the attendants, doctors, or orderlies acquired influenza or pneumonia although the wards were often full of both diseases.

Other paragraphs follow:

> All the communicable diseases have shown a reduction in the past week except measles and meningitis. The increase in measles has been almost wholly confined to the camps and depots where replacement troops have been assembled from the Base Ports for distribution in the Armies.
>
> The meningitis is widely scattered, only a few of the hospital groups in the Advance Section having reported more than one case in the same unit.
>
> The weekly case rate for influenza has fallen from 601 per 100,000 in the week ending October 25th to 261 per 100,000 in the week ending November 15th.
>
> The weekly case rate per 100,000 for pneumonia in the week ending October 25th has fallen from 109 to 42.5 in the week ending November 15.

Dec. 2, 1918

This bulletin first points out the inaccuracy of many reports as to the cause of death given by pathologists in connection with the Army. Paragraphs are devoted to a small outbreak of typhoid from untreated water at Autreville, to the management of diphtheria at a hospital center, to a memorandum on lipovaccines against pneumonia issued by the Surgeon-General's Office, to organization in the handling of venereal diseases, and to the final weekly review.

> There has been an increase in diphtheria, scarlet fever and meningitis; diphtheria showing an increase in several hospital centers. The meningitis increase is almost wholly confined to the advanced zone. These increases do not show any evidence of local epidemics, the cases for the most part being widely scattered.
>
> The monthly period, however, shows a marked reduction in dysentery and meningitis, a slight reduction in measles, and a marked increase in typhoid. Diphtheria slightly increased, with measles and scarlet fever showing little change.
>
> The improvement in the influenza and pneumonia situation continues. For the week ending November 22, 1,552 cases of influenza reported against 4,862 the week previous, and 407 of pneumonia against 793 the week previous.

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[1] Koch, Mathilda L., and Riddle, O.: The Chemical Composition of the Brain of Normal and Ataxic (?) Pigeons, Am. Jour. Physiol., 1918, **47**, 124.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

ARKANSAS

Pine Bluff—Jenkins, J. S.

CALIFORNIA

Pomona—Edgerton, H. W.

COLORADO

Denver—Hierley, I. C.
Trinidad—Presnall, C. W.

DISTRICT OF COLUMBIA

Washington—Custis, J. B. G.

FLORIDA

Bushnell—Hubbard, R. C.

GEORGIA

Gainesville—Rudolph, J. B.
Griffin—Anthony, E. H.

ILLINOIS

Chicago—Green, F. R.
Oak Forest—Turner, J. W.
Peoria—Ernest, J. R.

INDIANA

Dunkirk—Garber, E. C.
Napoleon—Cox, L. T.

KANSAS

Arkansas City—Young, R. C.

KENTUCKY

Fort Thomas—Robertson, J. A.

MARYLAND

Baltimore—Perry, W. B.

MASSACHUSETTS

New Bedford—Matthewson, F. W.
Winthrop—Basch, W. E. R.

MICHIGAN

Houghton—Harkness, R. B. E.

MISSISSIPPI

Lexington—Stephenson, R. M.

MONTANA

Darby—Haywood, H.

NEBRASKA

Hastings—Stewart, S. J.
Lincoln—Des Jardien, A. R.

NEW YORK

Albany—Davis, C. E.
Branchport—Costello, M. E.
Brooklyn—Giancontieri, V.
East Randolph—Crossman, J. E.
New York—Bowlby, H. M.
    Brown, S. A.
    Diamond, B.
    Haynes, H. W.
    Labruier, F. J.

PENNSYLVANIA

Chester—Grist, J. M.
McKees Rocks—Eicher, C. G.
Monaca—Gormley, J. R.

RHODE ISLAND

Providence—Cutts, W. B.

SOUTH CAROLINA

Clinton—Hays, L. St. C.

SOUTH DAKOTA

Scotland—Leighton, I. W.

TENNESSEE

Memphis—Stone, L. A.

TEXAS

Galveston—Haden, H. C.

WEST VIRGINIA

Barrackville—Smith, E. P.
Quinimont—Lewis, W. D.

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Alabama

To Camp Sheridan, Ala., as tuberculosis examiner, from Camp Wheeler, Lieut. A. JOHNSON, Clanton.

To Fort Leavenworth, Kan., from Camp Grant, Lieut. M. L. MOORER, Mount Vernon.

To report to commanding general, Northeastern Department, from Boston, Lieut. J. R. MORGAN, Heflin.

The following order has been revoked: *To Biltmore, N. C.*, for instruction, from Fort Oglethorpe, Capt. R. C. JONES, Mobile.

Arizona

To Denver, Colo., from Fort Oglethorpe, Lieut. W. E. McWHIRT, Safford.

To Washington, D. C., from Camp A. A. Humphreys, Lieut. W. N. McDUFFIE, San Carlos.

Arkansas

The following order has been revoked: *To Camp MacArthur, Texas*, from Fort Des Moines, Major W. A. SNODGRASS, Little Rock.

California

To Azalea, N. C., from Camp Crane, Lieut. F. W. H. TAYLOR, San Diego.

To Camp Beauregard, La., base hospital, as commanding officer, from Camp Wheeler, Lieut.-Col. J. M. WHEATE, San Francisco.

To Camp Crane, Pa., from Hoboken, Capt. P. M. SAVAGE, San Bernardino.

To Camp Devens, Mass., base hospital, from Fort Oglethorpe, Lieut. E. C. BLACK, San Diego.

To Camp Hancock, Ga., from Camp Greene, Capt. J. L. LOHSE, Oakland.

To Camp Kearney, Calif., from Fort Oglethorpe, Capt. B. G. PINKERTON, Los Angeles. Base hospital, from Fort Oglethordpe, Capt. G. L. MARION, San Francisco.

To Camp Lewis, Wash., from Fort Oglethorpe, Lieut. J. F. SLAVICH, San Francisco.

To Camp Sherman, Ohio, base hospital, from Fort Oglethorpe, Lieut. A. O. HOLMES, Redlands.

To Everman, Texas, Barron Field, from Mineola, Capt. A. R. BAER, San Francisco.

To Fort Leavenworth, Kan., from Camp Fremont, Lieut. M. H. HIRSCHFELD, San Francisco.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Williamsbridge, N. Y.*, from Camp Lee, Capt. H. P. WILSON, Whittier.

To San Francisco, Calif., Letterman General Hospital, from Fort Douglas, Capt. A. L. BROWN, Riverside; from Fort Oglethorpe, Major H. R. OLIVER, San Francisco.

The following orders have been revoked: To Camp Wadsworth, S. C., base hospital, from Camp Crane, Capt. H. K. FABER, San Francisco. *To Hollywood, Calif.*, from Fort McDowell, Capt. F. P. BRENDEL, San Francisco. *To New Haven, Conn.*, Yale Army Laboratory School, from Hoboken, Lieut. T. L. ROGERS, Long Beach.

Canal Zone

To Camp Upton, N. Y., base hospital, for instruction, from Fort Oglethorpe, Lieut. L. M. DRENNAN, Ancon.

To Camp Wheeler, Ga., base hospital, from Camp Crane, Lieut. D. J. MURPHY, Corozal.

Colorado

To Fort Douglas, Utah, from Fort Oglethorpe, Lieut. L. H. WADE, Denver.

To Newport News, Va., from Fort Oglethorpe, Lieut. E. K. SHELTON, Antonito.

To Whipple Barracks, Ariz., for instruction, from Fort Oglethorpe, Capt. H. R. McGRAW, Denver.

Connecticut

To Camp Jackson, S. C., base hospital, from Fort Oglethorpe, Lieut. W. J. H. FISCHER, Milford.

To Camp Wadsworth, S. C., base hospital, from Fort Oglethorpe, Capt. A. SCRIMGEOUR, Bridgeport.

To Dallas, Texas, Love Field, as flight surgeon, from Camp Dick, Capt. A. E. BRIDES, New Haven.

To Madison Barracks, N. Y., from Fort Oglethorpe, Lieut. C. H. AUDET, Waterbury.

To New Haven, Conn., from Camp Crane, Capt. R. E. BLACK, New London.

To Pittsburgh, Pa., from Plattsburg Barracks, Capt. L. A. NOTKINS, New Haven.

To report to the commanding general, Northeastern Department, from Boston, Lieut. H. S. REYNOLDS, Hartford.

District of Columbia

To Camp Upton, N. Y., base hospital, for instruction, from Fort Oglethorpe, Capt. F. W. ROMAINE, Washington.

To Long Beach, N. Y., from the Surgeon-General's Office, Major E. B. NEFF.

To Pittsburgh, Pa., from Washington, Lieut.-Col. E. D. KRAMERS.

Florida

To Lakewood, N. J., from Camp Crane, Lieut. W. W. FARNELL, Springfield.

To Lonoke, Ark., Eberts Field, from San Antonio, Lieut. R. E. GILBERT, Jacksonville.

To report to the [illegible] hern Department, from Fort Bayard, Capt. [illegible] a.

To Waco, Texas, [illegible], Lieut. M. A. LISCHKOFF, Pensacola.

Georgia

To Camp Beauregard, La., base hospital, from Fort Oglethorpe, Lieut. D. M. BRADLEY, Waycross.

To Camp Bowie, Texas, base hospital, from Fort Oglethorpe, Capt. J. J. CLARK, Waycross.

To Camp Devens, Mass., base hospital, from Fort Oglethorpe, Lieut. H. L. BARER, Carrollton.

To Camp Grant, Ill., base hospital, from Fort Oglethorpe, Lieut J. H. CAMPBELL, Jefferson.

To Camp Gordon, Ga., base hospital, from Camp Zachary Taylor, Lieut. F. P. NORMAN, Greenville.

To Camp Upton, N. Y., base hospital, for instruction, from New York, Lieut. L. W. WILLIAMS, Savannah.

To Fort Benjamin Harrison, Ind., from Camp Meade, Capt. J. A. WHITE, Albany.

To Fort Douglas, Utah, from Fort Oglethorpe, Lieut.-Col. A. D. PARCE.

To Fort McHenry, Md., from Carlisle, Capt. L. W. CHILDS, Atlanta.

To Fort Sam Houston, Texas, base hospital, from Camp Crane, Lieut. C. USHER, Savannah.

The following order has been revoked: *To Rochester, Minn.*, Mayo Clinic, for instruction, from Fort McPherson, Major W. T. WEISSINGER.

Idaho

To Camp Upton, N. Y., base hospital, for instruction, from Fort Oglethorpe, Lieut. J. L. McDONALD, Payette.

To Fort Des Moines, Iowa, from Fort Oglethorpe, Lieut. E. N. ROBERTS, Pocatelo.

Illinois

To Camp Custer, Mich., from Ann Arbor, Capt. O. O. STANLEY, Champaign.

To Camp Grant, Ill., base hospital, from Fort Oglethorpe, Capt. G. L. ALT, Chicago.

To Camp Hancock, Ga., to examine the command for nervous and mental diseases, from Jackson Barracks, Capt. W. K. DYER, Kankakee.

To Camp Jackson, S. C., base hospital, from Fort Oglethorpe, Lieut. J. D. ELLIS, Chicago.

To Camp Logan, Texas, to examine the troops for cardiovascular diseases, from Fort Thomas, Lieut. G. H. ANDERSON, Chicago.

To Camp Sheridan, Ala., as tuberculosis examiner, from Camp Wheeler, Lieut. C. J. HYSLOP, Chicago.

To Camp Sherman, Ohio, base hospital, from Fort Oglethorpe, Capt. J. M. GRAYBEAL, Lieut. F. A. LAGORIC, Chicago.

To Camp Upton, N. Y., base hospital, from Fort Oglethorpe, Lieut. J. J. McCARTY, Jr., Chicago.

To Camp Wadsworth, S. C., base hospital, from Fort Oglethorpe, Capt. C. M. McKENNA, Chicago.

To Camp Zachary Taylor, Ky., as tuberculosis examiner, from Jefferson Barracks, Capt. R. E. ADKINS, Chicago.

To Cape May, N. J., from Fort Oglethorpe, Lieut. E. F. SLAVIK, Chicago.

To Chicago for instruction, from Camp Crane, Lieut. S. F. UBALA, Chicago.

To Fort Benjamin Harrison, Ind., from Fort Oglethorpe, Lieuts. G. S. BETTS, Banner; R. H. STONGER, Kankakee.

To Fort Des Moines, Iowa, from Fort Oglethorpe, Lieut. J. P. GRAF, Chicago.

To Fort Ethan Allen, Vt., from Richomond, Capt. A. T. EIDE, Chicago.

To Fort Leavenworth, Kan., from Camp Zachary Taylor, Lieut. D. B. ROTMAN, Chicago; from Fort Riley, Capt. G. W. BROCK, Atlanta.

To Fort Moultrie, S. C., from Fort Oglethorpe, Lieut. H. KATZ, Chicago.

To Fort Ontario, N. Y., from Fort Oglethorpe, Lieut. S. MANN, Chicago.

To Fort Sheridan, Ill., from Indianapolis, Capt. J. A. GOODMAN, Chicago. For instruction, from Fort Oglethorpe, Capt. F. E. CULVER, Chicago.

To Hoboken, N. J., from Fort Oglethorpe, Capt. L. B. CAVINS, Bloomington.

To Hot Springs, N. C., Capt. W. D. NAPHEYS, Jr., Chicago.

To Lake Charles, La., Gerstner Field, from Mineola, Capt. G. C. OTRICH, Belleville.

To Millington, Tenn., Park Field, from Mineola, Lieut. S. M. MORWITZ, Chicago.

To Pittsburgh, Pa., from Fort Oglethorpe, Capt. H. E. PINTLER, Peoria; from Lakewood, Capt. S. R. CATLIN, Rockford.

To San Antonio, Texas, Kelly Field, from Mineola, Capt. C. M. ROBERTSON, Chicago.

The following orders have been revoked: *To Boston, Mass.,* from Camp Crane, Lieut. L. C. BASSETT, Farina. *To Camp Travis, Texas,* from Fort Oglethorpe, Capt. J. H. ELLINGSWORTH, East Moline. *To Rochester, Minn.,* Mayo Clinic, for instruction, and on completion *to his proper station,* from Camp Sherman, Capt. W. C. SMITH, Chicago.

Indiana

To Boston, Mass., from Fort Oglethorpe, Lieut. A. O. TRUELOVE, Warsaw.

To Camp A. A. Humphreys, Va., from Camp Crane, Capt. R. H. THOMAS, Indianapolis.

To Camp Benning, Ga., base hospital, from Fort Oglethorpe, Capt. S. L. EGART, Indianapolis.

To Camp Hancock, Ga., as tuberculosis examiner, from Fort Slocum, Capt. N. W. CLARK, Rossville.

To Camp Sherman, Ohio, base hospital, from Fort Oglethorpe, Lieut. H. J. PIERCE, Terre Haute.

To Camp Zachary Taylor, Ky., base hospital, from Fort Oglethorpe, Lieut. C. E. QUINN, Burlington.

To Denver, Colo., from Camp Travis, Capt. H. S. GIFFORD, Tipton.

To Fort Leavenworth, Kan., from Fort Oglethorpe, Lieut. C. C. BITLER, New Castle.

To Fort McHenry, Md., for instruction, from Fort Oglethorpe, Capt. H. A. DUENLING, Fort Wayne.

To Fort McPherson, Ga., from Fort Oglethorpe, Capt. R. C. SHANKLIN, South Bend.

To Fort Sheridan, Ill., from Camp Fremont, Major F. F. HUTCHINS, Indianapolis.

To Hoboken, N. J., from Newport News, Lieut. T. K. DAVIS, Wabash.

The following orders have been revoked: *To Camp Crane, Pa.,* from Hoboken, Lieut. L. G. SPRADLEY, Tennyson. *To Camp Logan, Texas,* from Fort Oglethorpe, Capt. C. M. DUPUY, Riley. *To West Baden, Ind.,* from Camp Crane, Lieut., R. A. GILMORE, Michigan City.

Iowa

To Biltmore, N. C., from Camp Crane, Lieut. M. T. MORTON, Iowa City.

To Camp Dodge, Iowa, from Camp Grant, Capt. J. H. SCHRUP, Dubuque.

To Denver, Colo., from Fort Oglethorpe, Capt. T. B. LACEY, Glenwood; from Fort Riley, Capt. J. T. PADGHAM, Grinnell.

To Fort Leavenworth, Kan., from Fort Riley, Capt. P. B. BATTEY, Independence; from [illegible] I. MARKER, Centerville.

To report to the [illegible], Northeastern Department, from Camp Devens, [illegible], Earlville.

The following order has been revoked: *To Camp Abraham Eustis, Va.,* from Camp Custer, Lieut. J. W. MYERS, Sheldon.

Kansas

To report to the commanding general, Northeastern Department, from Camp Devens, Lieut. G. D. RUTH, Moundridge.

Kentucky

To Boston, Mass., from Camp Crane, Lieut. W. G. COMBS, Kirksville.

To Camp Devens, Mass., base hospital, from Fort Oglethorpe, Lieut. M. C. BAKER, Louisville.

To Camp Hancock, Ga., from Camp Lee, Lieut. E. J. NESTLEY, Covington.

To Camp Jackson, S. C., base hospital, from Fort Oglethorpe, Lieuts. W. J. FLOWERS, Columbia; A. D. ECHERT, Newport.

To Camp Sevier, S. C., to examine the command for nervous and mental diseases, from Ann Arbor, Lieut. W. E. RENDER, Lakeland.

To Camp Travis, Texas, base hospital, from Fort Oglethorpe, Lieut. J. E. EDWARDS, Lancaster.

To Camp Wheeler, Ga., base hospital, from Fort Oglethorpe, Capt. L. H. KERR, Louisville.

To report to the commanding general, Northeastern Department, from Boston, Capt. R. L. WOODARD, Hopkinsville.

Louisiana

To Camp Beauregard, La., base hospital, from Camp Lee, Major O. L. POTHIER, New Orleans.

To Camp Hancock, Ga., from Camp Greene, Capt. E. HOLLOWAY, Paquemine.

To Camp Zachary Taylor, Ky., as tuberculosis examiner, from Jefferson Barracks, Lieut. P. L. QUERENS, Alexandria.

To Chicago, Ill., from Camp Jackson, Capt. R. E. STONE, New Orleans.

To Fort Leavenworth, Kan., from Fort Riley, Major R. C. P. TRUITT, Jackson.

To Markleton, Pa., for instruction, from Fort Oglethorpe, Capt. E. L. LECKERT, New Orleans.

Maine

To Lonoke, Ark., Eberts Field, from Mineola, Capt. S. E. FISHER, Portland.

Maryland

To Camp Joseph E. Johnston, Fla., base hospital, from Camp Jackson, Capt. T. P. SPRUNT, Baltimore.

To Camp McClellan, Ala., to examine the command for nervous and mental diseases, from Camp Forrest, Lieut. F. N. OGDEN, Baltimore.

To Camp Shelby, Miss., base hospital, from Fort Oglethorpe, Lieut. L. P. HOLMES, Baltimore.

To Fort Ontario, N. Y., from Fort Oglethorpe, Lieut. F. A. MILLER, Salisbury.

The following orders have been revoked: *To Camp Upton, N. Y.,* from Hoboken, Lieut. B. M. JAFFE, Baltimore. *To Richmond, Va.,* for instruction, from Fort Oglethorpe, Lieut. G. E. LANCASTER, Bowie.

Massachusetts

To Biltmore, N. C., from Camp Hancock, Major E. B. BIGELOW, Worcester.

To Boston, Mass., from Fort Oglethorpe, Capt. A. G. RICE, Springfield.

To Camp Beauregard, La., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. F. F. DEXTER, Long Meadow.

To Camp Devens, Mass., base hospital, from Fort Oglethorpe, Capt. E. A. CUNNINGHAM, Belmont; from New Haven, Major L. H. SPOONER, Boston.

To Camp Dick, Texas, from Mineola, Lieut. T. F. CAPELES, Haverhill.

To Camp Dodge, Iowa, as camp sanitary inspector, from Pittsburgh, Major J. WARREN, Boston.

To Camp Grant, Ill., base hospital, from Fort Oglethorpe, Capt. J. N. BOYER, Springfield; Lieut. H. C. TOOKER, Boston.

To Camp Hancock, Ga., from Camp Greene, Lieut. L. C. DURSTHOFF, Lowell.

To Camp Jackson, S. C., base hospital, from Fort Oglethorpe, Capt. H. F. DEARBORN, Lawrence; Lieut. J. L. DOWLING, Boston.

To Camp Sheridan, Ala., with the board examining the command for nervous and mental diseases, from Camp Sevier, Lieut. C. B. PARTINGTON, Framingham.

To Camp Zachary Taylor, Ky., base hospital, for instruction, from Fort Oglethorpe, Capt. W. I. CLARK, Jr., Worchester.

To Carlisle, Pa., for instruction, from Fort Oglethorpe, Lieut. W. F. DOLAN, Quincy.

To Colonia, N. J., from Camp Crane, Lieut. W. K. COFFIN, West Medford; from Fort Oglethorpe, Lieut. G. C. ANTHONY, Wellesley.

To Fort Sheridan, Ill., from Fort Oglethorpe, Capt. A. H. RING, Arlington Heights.

To Fort Sill, Okla., base hospital, from Fort Oglethorpe, Lieut. B. L. ASHMORE, Palmer.

To Garden City, N. Y., Mitchel Field, as assistant to flight surgeon, from Mineola, Lieut. L. R. BURNETT, Cambridge.

To Hoboken, N. J., from Fort Oglethorpe, Lieuts. A. J. LEARY, A. S. MacMILLAN, Boston.

To Plattsburg Barracks, N. Y., from Camp Devens, Capt. R. A. GREENE, Palmer.

To report to the commanding general, Northeastern Department, from Boston, Lieuts. D. F. MURPHY, Beverly; S. L. MARNOY, Chelsea.

The following orders have been revoked: *To Carlisle, Pa.,* from Fort Oglethorpe, Capt. W. G. CURTIS, Wollaston. *To Detroit, Mich.,* from Camp Crane, Lieut. N. B. McWILLIAMS, Williamstown.

Michigan

To Camp Abraham Eustis, Va., as orthopedic surgeon, from Fort Oglethorpe, Lieut. L. B. COWEN, Detroit.

To Camp Shelby, Miss., as camp surgeon, from Camp Devens, Lieut.-Col. W. H. HUTCHINGS, Detroit.

To Fort Benjamin Harrison, Ind., from Ann Arbor, Lieut. V. ADAIR, Ann Arbor.

To Fort Dupont, Del., from New Haven, Lieut. C. M. SPENCER, Freesoil.

To Fort Ontario, N. Y., for instruction, from Fort Oglethorpe, Capt. W. J. ANDERSON, Iron Mountain.

To Fort Sheridan, Ill., from Ann Arbor, Capt. F. S. BACHELDER, Pontiac.

To Hoboken, N. J., from Fort Oglethorpe, Lieut. J. H. MULLER, Grand Rapids.

To Pittsburgh, Pa., for instruction, from Fort Oglethorpe, Lieut. W. D. BARRETT, Detroit.

The following orders have been revoked: *To Camp Crane, Pa.,* from Hoboken, Capt. H. W. LONG, Escanaba. *To Fort Sheridan, Ill.,* from Camp Crane, Lieut. C. E. TRUESDELL, Detroit. *To Pittsburgh, Pa.,* from Camp Crane, Major W. H. MARSHALL, Flint.

Minnesota

To Camp Pike, Ark., from Fort Oglethorpe, Lieut. P. A. O'LEARY, Rochester.

To Camp Sevier, S. C., from Fort Oglethorpe, Lieut. A. H. SCHWARTZ, Duluth.

To Camp Zachary Taylor, Ky., to examine the command for nervous and mental diseases, from Camp Meade, Lieut. F. W. WHITMORE, St. Paul.

To Fort Benjamin Harrison, Ind., from Fort Oglethorpe, Lieut. W. B. MARTIN, Fergus Falls.

To Fort Des Moines, Iowa, from Fort Riley, Capt. W. H. REPLOGLE, Wabasha.

To Fort McHenry, Md., from the Surgeon-General's Office, Major A. R. COLVIN, St. Paul.

To Lakewood, N. J., from Camp Crane, Lieut. H. N. KLEIN, St. Paul.

To Otisville, N. Y., from Camp Crane, Lieut. W. H. DANIELS, Crookston.

To Pittsburgh, Pa., for instruction, from Fort Oglethorpe, Lieut. G. A. MURRAY, Rochester.

To report to the commanding general, Northeastern Department, from Boston, Lieut. F. H. NEHER, St. Paul.

Mississippi

To Hoboken, N. J., from Camp Shelby, Lieut.-Col. F. S. MACY.

To Pittsburgh, Pa., from Fort Oglethorpe, Capt. J. E. WALLACE, Biloxi.

Missouri

To Baltimore, Md., from Camp Crane, Capt. F. R. MORLEY, Sedalia.

To Camp Benning, Ga., from Fort Oglethorpe, Capt. D. B. GARSTANG, St. Louis.

To Camp Crane, Pa., from Hoboken, Capt. W. L. SHARP, Little Rock.

To Camp Lee, Va., base hospital, from Fort Oglethorpe, Lieut. B. F. HARRIS, Kansas City.

To Camp Meade, Md., base hospital, from Camp Bowie, Capt. J. E. DEWEY, Springfield.

To Camp Sevier, S. C., base hospital, from Fort Oglethorpe, Lieut. D. J. ROYER, Joplin.

To Camp Travis, Texas, base hospital, from Fort Oglethorpe, Lieut. F. W. HAYNES, St. Louis.

To Camp Wheeler, Ga., base hospital, from Camp Crane, Lieut. E. V. KRING, St. Louis.

To Denver, Colo., from Camp Pike, Lieuts. W. O. FINNEY, Chaffee; M. H. SHELBY, Charleston; from Fort Riley, Capt. S. B. HIRSCHBERG, Kansas City.

To Fort McHenry, Md., from New York, Lieut. L. E. MONROE, Bonne Terre.

To Otisville, N. Y., for instruction, from Fort Oglethorpe, Capt. G. W. KOENIG, St. Louis.

To St. Louis, Mo., from Hot Springs, Capt. J. F. POTTS, St. Louis.

To report to the commanding general, Northeastern Department, from Camp Devens, Capt. H. A. BREYFOGLE, Kansas City; A. GUNDLACH, St. Louis; Lieut. S. B. BUCK, Anderson.

The following order has been revoked: *To Fort Des Moines, Iowa*, for instruction, from Camp Crane, Lieut. A. M. GREGG, Joplin.

Montana

To report to the commanding general, Eastern Department, from Camp Devens, Lieut. C. W. BICE, Great Falls.

Nebraska

To Camp Travis, Texas, base hospital, from Camp Grant, Capt. J. F. KELLY, Dawson.

To Otisville, N. Y., from Fort Oglethorpe, Major W. N. ANDERSON, Omaha.

To report to the commanding general, Northeastern Department, from Camp Devens, Capt. F. P. REED, Weeping Water.

To San Francisco, Calif., from Fort Oglethorpe, Capt. F. H. KUEGLE, Omaha.

The following orders have been revoked: *To Camp Crane, Pa.*, from Hoboken, Capt. C. K. GIBBONS, Kearney. *To Jefferson Barracks, Mo.*, from St. Louis, Capt. F. C. GENUNG, Wausa.

Nevada

To Fort Sill, Okla., base hospital, from Fort Oglethorpe, Lieut. R. A. BOWDLE, East Ely.

New Hampshire

To Camp Dix, N. J., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Capt. E. A. TRACY, Keene.

To Camp Greene, N. C., base hospital, for instruction, from Fort Oglethorpe, Lieut. L. B. MARCOU, Berlin.

To Camp Upton, N. Y., base hospital, from Camp Crane, Capt. F. A. SPRAGUE, Concord.

To Colonia, N. J., from Camp Crane, Lieut. E. A. JONES, Manchester.

To Fort Leavenworth, Kan., from Fort Oglethorpe, Lieut. G. A. JOHNSON, Concord.

To Hoboken, N. J., from Fort Oglethorpe, Lieut. A. C. LISTON, North Walpole.

New Jersey

To Camp Devens, Mass., base hospital, from Camp Zachary Taylor, Lieut. P. LIVINGSTON, East Orange.

To Camp Greene, N. C., base hospital, for instruction, from Fort Oglethorpe, Lieut. J. A. DERIVAUX, Newark.

To Camp Hancock, Ga., from Camp Lee, Lieut. M. KUMMEL, Harrison.

To Camp Logan, Texas, with the board examining the troops for cardiovascular diseases, from Camp Travis, Capt. T. ALSOP, Atlantic City.

To Camp Meade, Md., from Fort Oglethorpe, Lieut. J. J. GREENGRASS, Paterson.

To Camp Wadsworth, S. C., base hospital, from Fort Oglethorpe, Lieut. H. B. EPSTEIN, Newark.

To Camp Zachary Taylor, Ky., base hospital, for instruction, from Fort Oglethorpe, Capt. J. I. FORT, Newark.

To Chicago, Ill., from Fort Oglethorpe, Lieut. H. J. PERLBERG, Jersey City.

To Fort Adams, R. I., from Fort Oglethorpe, Lieut. H. N. GOLDING, Paterson.

To Fort Leavenworth, Kan., from Camp Jackson, Lieut. H. I. REXFORD, Willard.

To Fort Totten, N. Y., from Camp Dix, Lieut. J. F. BOWMAN, Irvington.

To Hoboken, N. J., from Fort Oglethorpe, Lieut. J. D. TIDABACK, Newark.

To Plattsburg Barracks, N. Y., for instruction, from Fort Oglethorpe, Lieut. G. W. FINKE, Hackensack.

To Port Terminal, S. C., as camp sanitary inspector, from Fort Oglethorpe, Capt. F. B. MITCHELL, East Orange.

To report to the commanding general, from Camp Devens, Capt. E. L. WEST, Trenton.

To Richmond, Va., from Fort Oglethorpe, Lieut. I. S. INGBER, Secaucus.

To Walter Reed General Hospital, D. C., for instruction, from Camp Lee, Capt. M. ASHER, Newark.

The following order has been revoked: *To Camp Abraham Eustis, Va.*, base hospital, from Hoboken, Major L. O. TARLETON.

New York

To Austin, Texas, University of Texas, from Mineola, Capt. F. H. LASHER, Brooklyn.

To Azalea, N. C., from Fort Oglethorpe, Capt. L. H. FINCH, Amsterdam; Lieut. J. S. EDLIN, New York.

To Boston, Mass., from Camp Crane, Lieut. G. G. DAVIS, Arcade; from Washington, Capt. C. E. E. PANNACI, Gloversville.

To Camp A. A. Humphreys, Va., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Capt. P. S. SABINE, New York.

To Camp Bowie, Texas, with the board examining the troops for cardiovascular diseases, from Camp Crane, Lieut. J. D. TRASK, Jr., New York.

To Camp Custer, Mich., base hospital, from Fort Oglethorpe, Capt. A. S. TENNER, New York.

To Camp Devens, Mass., base hospital, from Fort Oglethorpe, Lieuts. A. S. BLUMGARTEN, New York; R. A. ADAMS, Whitestone.

To Camp Dix, from Fort Oglethorpe, Lieut. L. L. COHAN, Brooklyn.

To Camp Greene, N. C., base hospital, for instruction, from Fort Oglethorpe, Lieut. C. W. DEMONG, Syracuse.

To Camp Hancock, Ga., from Camp Greene, Lieut. A. LACOVARA, New York; from Camp Lee, Lieut. H. J. SCHWARTZ, New York. [illegible] examiner, from Waynesville, Capt. H. VAN RENSSE- [illegible] *ine the command* for nervous and mental [illegible] Capt. J. F. SHANAHAN, Buffalo.

[illegible], base hospital, from Fort Oglethorpe, Capt. [illegible] k; Lieuts. L. T. FRICKE, Brooklyn; R. P. HIGGINS, Cortland; B. EDELSACK, New York; from New Haven, Lieut. G. P. McNEILL, New York.

To Camp Joseph E. Johnston, Fla., base hospital, from Fort Oglethorpe, Capt. L. A. WING, New York.

To Camp Lee, Va., base hospital, from Fort Oglethorpe, Lieuts. S. T. HAMILTON, Elmira; N. W. GETMAN, Oneonta.

To Camp Logan, Texas, with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Capt. J. J. KLEIN, East Aurora.

To Camp McClellan, Ala., with the board examining the troops for cardiovascular diseases, from Camp Zachary Taylor, Lieut. F. W. HOMCOMB, Palenville.

To Camp Meade, Md., from Curtis Bay, Capt. G. J. BUSCK, Westfield; from F[illegible] C. F. POTTER, Syracuse.

To Camp [illegible] berculosis examiner, from Camp Wheeler, Cap[illegible] Lieut. M. SCHAIE, New York.

To Camp Sl[illegible] Oglethorpe, Lieut. J. H. BURKE, Brooklyn.

To Camp Upton, N. Y., base hospital, from Fort Oglethorpe, Capt. N. L. HAWKINS, Watertown; Lieuts. I. J. LEVY, L. HAMELOK, New York.

To Camp Wadsworth, S. C., to examine the command for nervous and mental diseases, from Camp Jackson, Lieut. J. MARSHACK, New York.

To Camp Zachary Taylor, Ky., base hospital, from Fort Oglethorpe, Lieut. H. ACKERMAN, New York.

To Carlisle, Pa., for instruction, from Fort Oglethorpe, Lieut. A. D. HAVERSTOCK, Brooklyn.

To Chicago, Ill., from Fort Oglethorpe, Capt. S. I. HIRSCH, New York; from New Haven, Major H. L. VAN WINKLE, Albany.

To Colonia, N. J., from Camp Crane, Capt. W. H. VEEDER, Rochester; from New York, Lieut. H. S. BULL, Auburn.

To Dansville, N. Y., from Camp Custer, Major A. S. MOORE, Middletown.

To Emmetsburg, Md., from Baltimore, Capt. E. W. BROWN, Mount Kisco.

To Fort Bayard, N. M., from Camp Grant, Capt. L. R. CORNMAN, Rochester.

To Fort Benjamin Harrison, Ind., from Fort Oglethorpe, Lieuts. L. A. BOUTON, Fonda; A. CANFIELD, New York; D. H. BLUESTONE, Syracuse.

To Fort Leavenworth, Kan., from Camp Lee, Lieut. L. E. SANFORD, Binghamton; from Fort Jay, Capt. A. T. BAKER, Elmhurst.

To Fort McPherson, Ga., from Fort Oglethorpe, Capt. H. G. DUNHAM, Lieuts. S. W. ROCK, S. STEIN, New York.

To Fort Ontario, N. Y., from Fort Oglethorpe, Lieut. S. MILBANK, New York.

To Fort Riley, base hospital, from Fort Oglethorpe, Capt. W. W. BESTWICK, New York.

To Fort Sheridan, Ill., from Fort Oglethorpe, Lieut. W. W. WOGLOM, De Ruyter.

To Hoboken, N. J., from Fort Oglethorpe, Major W. H. STEWART, New York; Lieut. W. H. GALLAGHER, Niagara Falls.

To Lakewood, N. J., from Camp A. A. Humphreys, Lieut. A. E. NEERGAARD, New York.

To Madison Barracks, N. Y., from Fort Oglethorpe, Lieuts. A. R. SHIRLEY, New York; A. T. LAWLESS, Syracuse.

To Newport News, Va., from Washington, Cols. R. P. A. SULLIVAN, Brooklyn; L. A. CONNER, New York.

To Otisville, N. Y., for instruction, from Fort Oglethorpe, Capt. F. KNOWLES, New York.

To report to the Commanding General, Northeastern Department, from Boston, Lieut. H. T. BLAIR, Brooklyn.

To Rockefeller Institute, from Camp Crane, Capt. E. C. KOENIG, Buffalo.

To Walter Reed General Hospital, D. C., from Fort Oglethorpe, Lieut. W. W. ELDRIDGE, New York. For instruction, from Williamsbridge, Capt. N. E. TITUS, New York.

To Washington, D. C., from Camp A. A. Humphreys, Lieut. H. SHARP, New York.

To Waynesville, N. C., from Fort Oglethorpe, Lieut. J. B. DEUEL, Rochester. For instruction, from Fort Oglethorpe, Lieut. D. P. MacGUIRE, Staten Island.

To West Baden, Ind., from Fort Oglethorpe, Lieut. L. HAUSMAN, New York.

The following orders have been revoked: *To Boston, Mass.*, from Camp Crane, Capt. A. H. TERRY, New York. *To Camp Abraham Eustis, Va.*, from Eastern Department, Capt. F. W. HUNTER, Fort Totten. *To Camp Meade, Md.*, from Camp Crane, Lieut. J. M. McTIERNAN, New York. *To Lakewood, N. J.*, for instruction, from Camp Jackson, Major J. P. F. BURKE, Buffalo. *To report to the commanding General*, Eastern Department, from Camp Sherman, Lieut. G. W. WHEELER, New York. *To Rochester, Minn.*, Mayo Clinic, from Camp Crane, Major J. C. MASSON, Rochester. *To San Francisco, Calif.*, Letterman General Hospital, from Camp Crane Lieut. A. E. GORDIN, New York. *To White Plains, N. Y.*, from Camp Jackson, Major R. H. McCONNELL, New York.

North Carolina

To Camp Gordon, Ga., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Capt. C. C. ORR, Asheville.

To Camp Hancock, Ga., from Camp Greene, Lieut. L. O. GIBSON, Statesville.

To Camp Shelby, Miss., base hospital, from Fort Oglethorpe, Capt. J. J. BAREFOOT, Graham.

To Plattsburg Barracks, N. Y., from Camp Jackson, Capt. M. C. PALMER, Tryon.

Ohio

To Azalea, N. C., from Camp Crane, *Lieut H. H. LOWE*, Leesburg; from Fort Oglethorpe, Lieut. A. M. ROSENBLUM, Youngstown.

To Camp Abraham Eustis, Va., as orthopedic surgeon, from Fort Oglethorpe, Capt. L. B. ZINTSMASTER, Massillon; Lieut. N. J. SEYBOLD, Toledo.

To Camp Dodge, Iowa, with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Capt. R. H. QUICK, Toledo.

To Camp Grant, Ill., base hospital, from Fort Oglethorpe, Lieuts. H. P. TIMBERLAKE, Cleveland; H. K. BECKWITH, Toledo.

To Camp Hancock, Ga., from Camp Greene, Lieuts. B. B. BRIM, J. J. SWEENEY, Toledo.

To Camp Sheridan, Ala., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Capt. D. W. PHILO, Fremont.

To Cape May, N. J., from Camp Crane, Capt. M. E. BLAHD, Cleveland.

To Carlisle, Pa., from Ann Arbor, Capt. W. F. MAXWELL, Toledo.

To Denver, Colo., from Fort Riley, Lieut. R. R. KERKOW, Hicksville.

To Fort Leavenworth, Kan., from Ann Arbor, Lieut. L. A. LURIE, Cincinnati; from Fort Oglethorpe, Lieut. W. H. VORBAU, Lima.

To Fort McHenry, Md., for instruction, from Fort Oglethorpe, Lieut. F. F. KRAMER, Cincinnati.

To Fort Sam Houston, Texas, base hospital, from Ann Arbor, Lieut. P. G. TAIT, Toledo.

To Fort Snelling, Minn., from Army Medical School, Capt. E. A. KLEIN, Norwood.

To Hoboken, N. J., from Fort Oglethorpe, Lieut. W. P. ULTES, Springfield.

To Newport News, Va., from Fort Oglethorpe, Lieut. J. W. JOLLEY, Morral.

To Richmond, Va., from Fort Oglethorpe, Lieut. W. J. FRANCIS, Kalida.

To Walter Reed General Hospital, D. C., from Plattsburg Barracks, Lieut. A. E. KISER, Cincinnati.

To Washington, D. C., St. Elizabeth's Hospital, from Ann Arbor, Lieut. J. H. BERRY, Lima.

The following orders have been revoked: *To Camp Crane, Pa.,* from Hoboken, Lieut. D. W. FELLERS, Bloomville. *To Fort Dupont, Del.,* from Camp Holabird, Lieut. R. A. ELLIOTT, Alger.

Oklahoma

To Denver, Colo., from Fort Riley, Lieut. H. M. NICHOLSON, Muskogee.

To Fort Benjamin Harrison, Ind., from Fort Oglethorpe, Lieut. F. H. CLARK, El Reno.

Oregon

To Fort Leavenworth, Kan., from Camp Lewis, Lieut. D. R. ROSS, Salem.

The following orders have been revoked: *To Camp Lewis, Wash.,* base hospital, for instruction, from Camp Crane, Lieut. G. L. BOYDEN, Pendleton. *To Camp Wadsworth, S. C.,* base hospital, from Camp Crane, Capt. C. E. SEARS, Portland.

Pennsylvania

To Arcadia, Fla., Carlstrom Field, from Mineola, Capt. S. H. HORNE, Philadelphia.

To Baltimore, Md., from Plattsburg Barracks, Capt. C. C. WHOLEY, Pittsburgh.

To Camp Gordon, Ga., with the board examining the command for nervous and mental diseases, from Fort Oglethorpe, Lieut. W. C. CHANEY, Philadelphia.

To Camp Grant, Ill., base hospital, from Fort Oglethorpe, Lieut. G. C. GLENN, State College.

To Camp Hancock, Ga., from Camp Greene, Lieuts. F. J. CONAHON, Morea Colliery; J. M. HIGGINS, Sayre.

To Camp Henry Knox, and to Camp Zachary Taylor, Ky., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Capt. C. FALKOWSKY, Jr., Scranton.

To Camp Jackson, S. C., base hospital, from Camp Crane, Lieut. J. M. FLEMING, Blairs Mills; from Camp Travis, Capt. G. P. PILLING, Jr., Philadelphia.

To Camp Logan, Texas, base hospital, from Camp Dodge, Lieut. W. E. RAMSEY, Philadelphia.

To Camp Sherman, Ohio, base hospital, from Fort Oglethorpe, Lieut. H. W. JONES, Philadelphia.

To Camp Upton, N. Y., base hospital, from Fort Oglethorpe, Lieuts. P. A. LONERGAN, Dickson City; A. LEVY, Philadelphia.

To Camp Zachary Taylor, Ky., base hospital, for instruction, from Fort Oglethorpe, Capt. H. D. JORDAN, Allentown.

To Cape May, N. J., from Fort Oglethorpe, Lieut. J. P. ROTH, Ashland.

To Colonia, N. J., from Camp Crane Capt. R. J. BEHAN Pittsburgh; from Fort Oglethorpe, Lieut. E. N. FOSTER, Pittsburgh.

To Fort McHenry Md., from New York, Lieut. C. A. LEY, Pittsburgh.

To Fort Sheridan, Ill., from Fort Oglethorpe, Lieut. D. J. MORTON, [illegible] nstruction, from Fort Oglethorpe, Capt. H. P. LEO- [illegible] Taliaferro Field, as assistant to flight surgeon, from Mineola, Capt. C. W. JENNINGS, Pittsburgh.

To Hoboken, N. J., from Fort Oglethorpe, Lieut. T. A. MONOHAN, Shenandoah.

To Houston, Texas, Ellington Field, from Mineola, Capt. W. MARSHALL, Pittsburgh.

To Pittsburgh, Pa., from Fort Oglethorpe, Lieut. J. A. MALONEY, Philadelphia.

To report to the Commanding General, Northeastern Department, from Boston, Capt. R. P. SMITH, Philadelphia; Lieut. S. H. KELLER, Pittsburgh; from Camp Devens, Capt. I. E. FREYMAN, Weatherly.

To Walter Reed General Hospital, D. C., from Camp Crane, Lieut. E. L. WHISTLER, Carlisle.

The following orders have been revoked: *To Hoboken, N. J.,* from Fort Hancock, Lieut. J. M. MONAGHAN, Minersville. *To Richmond, Va.,* for instruction, from Fort Oglethorpe, Lieut. R. S. HINCHMAN, McKeesport. *To West Baden, Ind.,* from Camp Crane, Lieut. B. FULTON, Pittsburgh.

Philippine Islands

To San Francisco, Calif., from Philippine Islands, Major E. T. B. WEIDNER.

Rhode Island

To Cooperstown, N. Y., from Mineola, Capt. A. W. STEVENSON, Newport.

To Rochester, Minn., Mayo Clinic, for instruction, and on completion to *Walter Reed General Hospital,* from Walter Reed General Hospital, Lieut. W. J. O'KEEFE, Providence.

South Carolina

To Camp Lee, Va., from Camp Greene, Capt. E. F. ROSS, Anderson.

Tennessee

To Azalea, N. C., from Fort Oglethorpe, Lieuts. C. G. GRIFFIN, Nashville; E. A. GILBERT, St. Elmo.

To Camp Hancock, Ga., as tuberculosis examiner, from Waynesville, Capt. J. O. WOODS, Newport. Base hospital, from Fort Oglethorpe, Capt. R. W. DAKE, Nashville.

To Camp Jackson, S. C., base hospital, from Fort Oglethorpe, Lieut. H. S. SHOULDERS, Springfield.

To Camp Joseph E. Johnston, Fla., base hospital, from Fort Oglethorpe, Lieut. H. Q. FLETCHER, Chattanooga.

To Denver, Colo., from Fort Oglethorpe, Lieut. H. P. CONLEY, Memphis.

To Fort Benjamin Harrison, Ind., from Fort Oglethorpe, Lieut. T. D. CLOYD, Mosheim.

To Fort Leavenworth, Kan., from Columbus Barracks, Capt. J. P. SCHOLL, Nashville; from Fort Oglethorpe, Capt. G. A. HATCHER, Nashville.

To Hoboken, N. J., from Camp Crane, Capt. J. H. KING, Chestnut Mound.

To Lake Charles, La., Gerstner Field, as flight surgeon, from Mineola, Capt. G. E. CAMPBELL, Elizabethtown.

To Walter Reed General Hospital, D. C., from Camp Custer, Lieut. H. O. ANDERSON, Williamsport.

The following orders have been revoked: *To Fort Riley,* base hospital, from Fort Oglethorpe, Capt. O. J. PORTER, Columbia. *To report to the Commanding General,* Southeastern Department, from Fort Logan, Lieut. W. H. NILES, Tellico Plains.

Texas

To Camp Bowie, Texas, base hospital, from Fort Oglethorpe, Lieut. A. C. ROGERS, Odell.

To Camp Hancock, Ga., from Camp Greene, Lieut. T. M. JARMON, Terrell.

To Camp Henry Knox and *to Camp Zachary Taylor, Ky.,* with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Major E. V. DePEW, San Antonio.

To Camp MacArthur, Texas, base hospital, from Fort Oglethorpe, Lieut. W. S. LORIMER, Handley.

To Camp Shelby, Miss., for instruction, from Camp Crane, Major W. M. WOLF, San Antonio.

To Camp Sherman, Ohio, base hospital, from Fort Oglethorpe, Capt. W. B. HUNTER, Fort Bliss.

To Dallas, Texas, from San Antonio, Lieut. D. A. MOHLER, Dallas.

To Fort McHenry, Md., for instruction, from Fort Oglethorpe, Capt. M. W. SHERWOOD, Temple.

To Fort Sill, Okla., base hospital, from Fort Oglethorpe, Capt. J. H. BRICE, Lamesa.

The following orders have been revoked: *To Camp Abraham Eustis, Va.,* from Camp Custer, Lieut. L. PENROD, Gonzales. *To Dallas, Texas,* from San Antonio, Lieut. R. M. MILNER, Yoakum. *To Camp Shelby, Miss.,* for instruction, from Camp Crane, Major W. M. WOLF, San Antonio.

Utah

To Camp Hancock, Ga., as tuberculosis examiner, from Fort Oglethorpe, Lieut. G. W. GOINS, Toolle.

Virginia

To Camp Devens, Mass., base hospital, from New Haven, Lieut. G. A. L. KOLMER, Salem.

To Camp Hancock, Ga., from Camp Lee, Capt. E. W. YOUNG, McKenney.

To Fort McHenry, Md., for instruction, from Fort Oglethorpe, Capt. J. M. ROBINSON, Danville.

To Hoboken, N. J., from Fort Oglethorpe, Lieut. J. L. HANKINS, Fordwick.

To report to the Commanding General, Northeastern Department, from Boston, Lieut. J. A. LAFFERTY, McKees Rocks.

Washington

To Fort Leavensworth, Kan., from Camp Lewis, Major A. P. CALHOUN, Seattle; from Fort Oglethorpe, Lieut. J. HEHIR, Sedro-Wooley.

To Fort George Wright, Wash., Capt. A. A. MATTHEWS, Spokane.

To San Diego, Calif., Rockwell Field, as assistant to flight surgeon, from Mineola, Capt. G. W. BEELER, Seattle.

West Virginia

To Azalea, N. C., from Camp Devens, Capt. G. H. BARKSDALE, Charleston.

To Boston, Mass., for instruction, from Camp Beauregard, Capt. J. C. SCHULZ, Huntington.

To Camp Crane, Pa., from Hoboken, Lieut. J. C. LAWSON, Logan.

To Camp Hancock, Ga., base hospital, from Fort Oglethorpe, Lieut. W. S. Crawford, Follansbee.

To Camp Meade, Md., from Camp Gordon, Major E. DAVIS, Charleston.

To Edgewood Arsenal, Md., as orthopedic surgeon, from Fort Oglethorpe, Lieut. E. B. HENSON, Charleston.

To Fort Leavenworth, Kan., from Camp Lee, Lieut. R. DODSON, Spencer.

Wisconsin

To Camp Gordon, Ga., with the board examining the troops for cardiovascular diseases, from Fort Oglethorpe, Lieut. R. E. FITZGERALD, Cudahy.

To Camp Shermon, Ohio, base hospital from *Boston,* Capt. J. W. POWERS, Burlington.

To Camp Wheeler, Ga., base hospital, from Camp Crane, Lieut. O. E. ISHMAEL, Mount Horeb.

To Fort Sheridan, Ill., from Fort Oglethorpe, Lieut. P. C. HODGES, Madison.

To Fort Snelling, Minn., from Fort Oglethorpe, Lieut. W. G. SEXTON, Marshfield.

To West Point, Miss., Payne Field, as flight surgeon, from Mineola, Major C. W. ANDREWS, Waupaca.

ORDERS TO OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Asst. Surg. M. C. EDMUNDS, proceed to the Reedy Island Quarantine Station for temporary duty.

Asst. Surg. M. F. HARALSON, proceed to Florence, Ala., for inspection of sanitary work now being carried on by the Service.

Acting Asst. Surg. J. J. DURRETT, proceed to Washington for conference relative to construction of a sewage disposal plant at Newport News, Va.

Acting Asst. Surg. I. R. GORROV, proceed to Washington, D. C., for conference relative to influenza work in the state of Ohio.

Sanitary Engr. C. N. HARRUB, relieved at Jacksonville, Fla., proceed to Columbus, Ga., for duty in extracantonment sanitation.

Scient. Asst. SEVERANCE BURRAGE, relieved at New London, Conn., proceed to Ayre, Mass., for duty in extracantonment sanitation.

Scient. Asst. WALLACE PURRINGTON, relieved at New London, Conn., proceed to Portsmouth, N. H., for duty in extracantonment sanitation.

Chief Sanitary Insp. W. H. GILLETTE, relieved at Jacksonville, Fla., proceed to Atlanta, Ga., for duty in extracantonment sanitation.

Chief Sanitary Insp. JOHN F. GORDON, relieved at Portsmouth, N. H., proceed to Raleigh, N. C., for duty in extracantonment sanitation.

Chief Sanitary Insp. J. L. JACKSON, relieved at Jacksonville, Fla., proceed to Columbus, Ga., for duty in extracantonment sanitation.

Chief Sanitary Insp. W. J. JOYCE, relieved at New London, Conn., proceed to Raleigh, N. C., for duty in extracantonment sanitation.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest; such as relate to society activities, new hospitals, education, public health, etc.)

CALIFORNIA

Personal.—Dr. Frank H. Pritchard, Colton, who has been seriously ill with heart disease following influenza, is reported to be convalescent.——Dr. James B. Cutter, Watsonville, has been appointed executive surgeon at the Southern Pacific Hospital, San Francisco.——Dr. Ernest Crutcher, Los Angeles, has been appointed special representative of the state board of health to take charge of the influenza situation at Blythe in the Imperial Valley.

County Medical Society Protests Discharge of Reserve Officers.—The San Diego County Medical Society has protested to the adjutant-general of the state of California regarding the manner in which physicians serving with the Medical Corps are being discharged from service on telegraphic orders. The protest states that:

> Whereas, medical officers who gave up good homes and lucrative practices to enter the medical reserve corps are being discharged from the service on telegraphic orders from Washington without proper notice or customary privileges due an officer.
>
> This council hereby protests against this manner of discharge and asks that Adjutant-General Borree communicate with the proper authorities in Washington and have such irregularities corrected.

ILLINOIS

Disqualified Physician Fined.—Dr. Samuel R. Harwood of East St. Louis, whose license to practice medicine and surgery in the state of Illinois was revoked some three months ago, has promised the authorities of St. Clair County that he will leave the state if they will permit him to plead guilty to one of the eight indictments returned against him by the grand jury of that county and pay a fine of $500 for obtaining money under false pretenses. His offer has been accepted by the state's attorney. The eight indictments returned against Harwood for practicing a confidence game and obtaining money under false pretenses were returned by the grand jury of St. Clair County immediately following the revocation of his license.

Licenses Revoked.—At a meeting of the Department of Registration and Education of the State of Illinois, held in Chicago, Dec. 9, 1918, the license of Franklin J. Oshay, Ladd, who holds license No. 10724, issued by the state board of health, Nov. 15, 1892, to practice medicine and surgery in all their branches in the state of Illinois, was revoked. The charges against Dr. Oshay were that he was an habitual drunkard, and was careless in the writing of prescriptions for habit forming drugs. The license of August M. Unger, Chicago, No. 10546, issued by the state board of health, April 7, 1892, was also revoked. He was charged with unprofessional conduct to young women who answered an advertisement for an office girl. He was charged with telling them that under a recently passed state law all office girls working for physicians were required to submit to a physical examination before beginning their work.

MARYLAND

Personal.—It is reported that Brig.-Gens. J. M. T. Finney and W. S. Thayer have been ordered back to the United States from France.——Lieut. J. Galen Skilling, surgeon in the First Battalion, Twenty-Sixth Infantry of the First U. S. Army, formerly from Cumberland, has been reported as missing since November 7.——Health Commissioner John D. Blake has announced the appointment of Dr. Robert G. Lumpkin of Roland Park, as throat inspector for the health department. Dr. Lumpkin succeeds Dr. G. H. Woltereck, who resigned.

Bon Secours Hospital Opened.—The new Bon Secours Hospital in Baltimore, given by Mr. and Mrs. George C. Jenkins to the sisters of that order, was formally opened, December 21, by Cardinal Gibbons who dedicated the building. The new hospital is provided with the latest and most perfect appliances required in hospital service and will enable the sisters to attend surgical operations in their own hospital. Mother Urban, superior of the Bon Secours Convent, is directress and the following medical men of Baltimore are members of the staff: Dr. Thomas R. Brown, Dr. E. B. Freeman, Dr. Charles O'Donovan, and Dr. E. H. Gaither. The surgical staff is composed of Drs. Alexis McGlannan, J. C. Pound, J. K. Seegar, and M. Kahn.

MASSACHUSETTS

Want Physician for Health Commissioner.—At a meeting of the Somerset Medical Society, held December 12, a resolution was adopted recommending a change in the department of health of the city by abolishing the present board of health and establishing in its stead, a graduate in medicine as full-time commissioner of health.

Personal.—Dr. Henry M. Smith, Lee, has been appointed associate medical examiner (coroner) of Berkshire County, to succeed Dr. John J. Hassett, deceased.——Dr. Esther M. E. Sundelof, Boston, has been appointed assistant physician of the City Hospital, roentgen-ray service.——In the case of "Dr." David Wagner, Springfield, who was said to have been found guilty of performing a criminal operation causing the death of Nellie Osham, and sentenced to five years' imprisonment in the state prison at Charlestown, the supreme court has overruled the exceptions, and the authorities have been ordered to arrest Wagner that he may serve his sentence.

NEBRASKA

Action Regarding Influenza.—At a meeting at the state capitol building in Lincoln, Tuesday, December 17, called by the state board of health and presided over by the epidemiologist of the state board, Dr. W. H. Wilson, important action was taken and recommendations made regarding influenza, which had assumed a serious stage throughout the state. The meeting was addressed by the governor and by Dr. W. F. Wild, head of the state board, and a committee was appointed consisting of Dr. Wild, Dr. A. J. Jenison, a member of the state legislature, and Superintendent A. H. Waterhouse of the Omaha public schools, which made the following recommendations: That local health boards be organized as provided by law in all counties, cities and villages where such do not now exist and that all boards enforce all present laws relating to contagious diseases, especially as applied to the present epidemic of influenza, and where such local boards fail to organize or fail to carry out the laws the state board establish a health organization and carry out the laws at the expense of such communities; or if local organizations are unable to cope with the situation that outside help be obtained. Each community is urged to organize a corps of nurses to be trained along practical lines, and complete reporting of cases is enjoined on physicians. Public schools should adopt medical inspection, or, in the absence of that, the teachers are to send home every child showing signs of illness with recommendation to parents to consult a physician. All gatherings for purposes of pleasure and all other unnecessary gatherings should be discontinued. Influenza is to be considered and treated as a quarantinable disease under present state quarantine regulations.

NEW YORK

Personal.—Dr. Arnold A. Samorini, Schenectady, sailed for Italy, December 3, to engage in Red Cross work.

Oral Hygiene Number.—*Health News*, the monthly bulletin of the New York State Department of Health, for November is devoted to the subject of oral hygiene. It contains articles on focal infections, by Meyer L. Rhein; importance of the care of the deciduous teeth, by Frederick A. Keyes; dental hygiene in the Rochester schools, by Harvey J. Burkhart; rational mouth hygiene, by Alfred C. Fones, who presents an illustrated article on how to brush the teeth, and an article on tooth-brush drill, by Albert H. Stevenson, besides editorial and miscellaneous matter.

New York City

Personal.—Charles F. Craig, commanding officer of the Army Laboratory School, at Yale University, New Haven, Conn., who met with a painful elevator accident recently in which he fractured his left leg and dislocated the left patella, is reported to be convalescing.——The Distinguished Service Medal was awarded, October 11, to Col. Louis M. Maus, M. C., U. S. Army, Washington, D. C., retired, by direction of the President, for "Specially meritorious service on the Belle Fourche River, N. D., on Nov. 5, 1877, in that while serving with a detachment suddenly surrounded by an overwhelming force of hostile Sioux Indians he succeeded in extricating the party from the most perilous position."

The Cartwright Prize.—Announcement is made by the Association of the Alumni of the College of Physicians and Surgeons in the City of New York of its biennial Cartwright Prize of $500 to be awarded at Commencement, 1919. Competitive essays must be presented on or before April 1, 1919, typewritten, in English, and accompanied by the usual safeguarding device or motto. They must contain records of original investigations made by the writer. In 1920 the Alumni Prize will be offered, the requirements for which are the same as the Cartwright Prize, excepting that competition is restricted to alumni of the College of Physicians and Surgeons. Essays offered for the Cartwright Prize should be sent to Dr. Henry E. Hale, secretary of the association, at 64 West Fiftieth Street, New York City.

New Diagnostic Hospital.—The New York Diagnostic Society has been organized by Dr. M. Joseph Mandelbaum. In a few days ground will be broken for the establishment of the first hospital of the Diagnostic Society, at 125 West Twenty-Second Street, which will be known as the West Side Branch of the Diagnostic Clinics of the Academy of Diagnosis. The ground and building represent an investment of $250,000. The building will be six stories and basement in height, and will be a model in regard to equipment for diagnostic tests. The society has now a membership of more than 400, and the officers are Dr. M. Joseph Mandelbaum, president; Dr. Monroe Bradford Kunstler, vice president; Lesser B. Grossel, secretary; J. Maxwell Van Dyke, treasurer, and David Frankel, president of the board of lay governors.

GENERAL

Bequests and Donations.—The following bequests and donations have recently been announced:

Episcopal Hospital and Visiting Nurse Society, Philadelphia, each $1,000 by the will of Edmond A. Souder.

Mount Sinai Hospital $10,000, Hebrew Benefit and Orphan Asylum and Montefiore Home each $1,000, and Lenox Hill Hospital, New York City, $500 by the will of Edward Oppenheimer.

New Public Health Officers.—At the annual meeting of the American Public Health Association held in Chicago, December 8 to 11, New Orleans was selected as the next place of meeting and the following officers were elected: president, Lee K. Frankel, New York City; vice presidents, Col. John W. S. McCullough, Toronto, Ont.; Col. Victor C. Vaughan, Ann Arbor, Mich., and Dr. John D. Robertson, Chicago; secretary, A. W. Hedrick, Boston; treasurer, Dr. Guilford H. Sumner, Des Moines, Iowa, and executive committee, Drs. Allan J. McLaughlin, U. S. P. H. S., Washington, D. C.; Charles J. C. O. Hastings, Toronto; Peter H. Bryce, Ottawa; John N. Hurty, Indianapolis, Ind., and William C. Woodward, Boston.

The Work of the Rockefeller Foundation.—George E. Vincent, president of the Rockefeller Foundation, outlined recently the plans of the foundation which included an expedition to Central and South America headed by Major-Gen. William C. Gorgas, formerly Surgeon-General, U. S. Army, to conquer yellow fever which now springs from a few small areas in Central and South America; the operation of a medical university in Peking, China, which is under construction with a cost of $6,000,000, and will be open in 1920, and which will contain eighteen university buildings, forty faculty residences, and a hospital with 200 beds, and a medical school soon to be begun at Shanghai. Subsidies are to be granted to existing missionary hospitals which will be standardized and offer internships for the university. Clinical stations and subhospitals will be established over China. For this work a total expenditure of $10,000,000 is expected, with an additional $250,000 to $500,000 annually for support.

Federal Aid in Rural Health Conditions.—As the result of careful study of rural health conditions, Representative Lever has come to the conclusion that rural health work should be conducted on the same basis as the Lever Extension Plan of promoting agricultural development. He has, therefore, introduced a bill embodying the principle of federal aid and advocates the prompt passage of this as a vital measure of national reconstruction. He calls attention to a bulletin just published by the United States Public Health Service embodying the results of a sanitary survey recently made. In this survey over 50,000 farm houses were visited in fifteen different counties. Of these less than 2 per cent. were equipped for the sanitary disposal of human excreta. More than two-thirds (68 per cent.) used a water supply which was obviously exposed to potentially dangerous contamination from privy contents or from promiscuous deposits of human excreta. In the majority of these the water was also exposed to pollution from stable yards and pig-sties. Only one third of the dwellings were effectively screened during the summer season, to prevent flies, which had free access to nearby deposits of human and other filth, from entering dining rooms and kitchens and contaminating foods intended for human consumption. The bill as introduced, provides an appropriation of $250,000 for the first fiscal year, to be allotted on the half and half plan to the several states, and an appropriation of an additional $250,000 each fiscal year thereafter until a continual appropriation of $1,000,000 is reached.

FOREIGN

Influenza in Switzerland.—The febrile epidemic in Switzerland has kept up so that the annual meetings of the Swiss Neurologic Society and of the Société médicale de la Suisse romande, scheduled to be held in October and November, were postponed *sine die*.

Census of War Disabled.—The prefects throughout Italy have been ordered by the government to collect from every community the data regarding disabled soldiers in their precincts injured in the war. Not only the names and numbers but the pensions paid, the kind and amount of reeducation, the artificial limbs provided, and other details of each individual case are to be compiled and when collected by the prefects are to be sent to the headquarters of the rehabilitation work for the province.

Deaths in the Profession Abroad.—Prof. **P. Dunant** of the University of Geneva, aged 84. He occupied the chair of hygiene from its foundation to his retirement in 1889, and published numerous works on medical statistics, hygiene and demography, and always took a leading part in matters affecting the public health and welfare. He was the brother of Henri Dunant, the founder of the Red Cross.——Dr. **J. Bruchi**, instructor in clinical surgery and operative medicine at Ravenna, aged 45.——Prof. **G. Basile**, assistant to the chair of nose and throat diseases at the University of Catania, and a writer on this specialty.

Committee for Revision of French Codex.—The Commission du Codex has just been appointed. It consists mainly of professors of pharmacy in different universities, with the chief of the pharmacy service for the state hospitals. The director of the system of state higher education is president of the commission, and Professor Roger, dean of the Faculté de médecine of the University of Paris, professor of experimental pathology, is vice president. The list includes also Professors Carnot, Moureu and Desgrez, of the chairs of therapeutics, pharmaceutical chemistry and medical chemistry at the University of Paris, E. Roux, director of the Pasteur Institute, and others to a total of twenty-three.

Agitation for a Minister of Health in France.—The lack of organization and coordination of the various agencies in charge of the public health service has been rendered particularly apparent by the recent events in France, and a concerted movement is now under way to have the public health and hygiene service reorganized as a government cabinet department. Among the forces actively at work to secure this is the Comité national de l'éducation physique et de l'hygiène sociale, the president of which is a member of the lower house from Paris. They appeal to organized industries, societies, associations of any and every kind, to sign and forward to the headquarters of this organization a brief petition which has been widely published, setting forth in half a dozen lines the evils of the present scattering of the public health agencies through so many different government departments, the wasting of effort and the overlooking of important matters between them.

Appeal from the Serbian Red Cross.—The *Policlinico* of November 17 brings an urgent appeal from the president of the Serbian Red Cross for aid to save the population which has been reduced by nearly one half, and which needs donations of clothing, underclothes, cloth, thread, needles, shoes, fresh or conserved foods, tea, sugar, condensed milk, soap, medicines and hospital supplies, besides cash. "Only by prompt donations of the kind," he says, "will it be possible to tide the populace along till the better days to follow the victory, and which the people have so fully and richly deserved. The whole Serbian nation to the depths of its great heart," he adds, "will cherish the deepest gratitude and remembrance of all those who manifest to them in their time of need sentiments of sympathy and altruism." Contributions can be sent to the R. Consolate of Serbia at Salonico or to the R. Console Generale di Serbia at Rome, Italy, via Poli, 25, addressed to the Serbian Red Cross or Croce Rossa Serba.

Two Hundred and Fiftieth Anniversary of Birth of Boerhaave.—Herman Boerhaave was born near Leyden in Holland, Dec. 31, 1668, and the profession in the Netherlands is making great efforts to celebrate the 250th anniversary of this date. In 1709 he was made professor of medicine and botany at the University of Leyden, and students flocked to him from all over Europe while he was remarkably successful as a practitioner of medicine. A story is told that he received a letter from a high official in China addressed merely "Dr. Boerhaave, Europe." The Surgeon-General's Catalogue devotes over two pages to the lists of his works and translations of them into different languages, and biographies and other works about him. He is generally considered to have inaugurated the era of scientific medicine. His "Aphorisms Concerning the Knowledge and Cure of Diseases" and his "Treatise on the Virtue and Energy of Medicines" were his principal works, but he also published several on "Venus Sickness," disease of the eyes, cancer, gallstones, etc. There is to be a festival meeting at the University of Leyden, the scene of his labors, and an exhibition of Boerhaaviana is to be open to the public for a month in the public museum. The National Medical Association and the city of Leyden have cooperated to make the celebration a worthy one. A recent bequest to the city has added materially to its collection of Boerhaaviana.

LONDON LETTER

London, Nov. 26, 1918.

Plans to Check Venereal Disease on Demobilization

The National Council for Combating Venereal Diseases has brought forward proposals for meeting the danger of a large increase when the troops are demobilized. It urges that though great progress has been made in the campaign against venereal diseases, the results are lamentably inadequate, and unless strong measures are taken, there will be grave danger to the public health. There will be about 300,000 men of the army and navy under treatment and infective on demobilization. The incidence of these diseases in the army, where instruction, treatment and discipline combine to reduce infection, is put at only 2 per cent.; in the adult civilian population, where those influences do not obtain, it is estimated at nearly 20 per cent. It is urged that immediate steps must be taken to prevent the spread of disease to wives, families and others. The council makes these recommendations: 1. The Local Government Board should authorize the appointment of whole time venereal officers (a man and a woman) on the staffs of the medical officer of each county or county borough. The present hospital accommodation should be supplemented by special clinics under the supervision of such venereal officers in every town of more than 10,000 inhabitants, and also in the county boroughs, such clinics to be open for continuous and early treatment for both men and women. The military authorities are asked to free immediately as many venereal specialists as the Local Government Board may require, in order that the time before demobilization may be used to establish the clinics to be available early in the new year. 2. Hospitals and medical schools should be requested to arrange special graduate courses for the training of medical women in the modern methods of treatment. A strong appeal is made to medical women to specialize in this subject. 3. Some means should be devised to encourage physicians to diagnose venereal disease in patients and to give early preventive treatment. 4. The army act should be so amended as to enable infective men to be retained pending the completion of treatment. 5. It should be made a statutory obligation for every individual suffering from venereal disease to obtain and to continue treatment until cured. 6. The Local Government Board should consider immediately whether some form of confidential notification of infective cases may be adopted under existing powers, and whether at a later date fresh powers may be obtained from Parliament to secure continuous treatment. 7. The minister of munitions should give instructions that all men and women working for national and controlled firms should receive adequate instruction from responsible physicians. 8. An adequate number of women police should be appointed, and the organization of voluntary women patrols should be increased. 9. Social organizations should increase their efforts to provide recreation under healthy conditions for the youth of the country, especially during the present period of rejoicing.

Simulated Diabetes

A business man, a native of Warsaw, was prosecuted and pleaded guilty of causing a solution of sucrose to be injected into his bladder with view to being rejected on medical examination for the army. He was fined $250. A few other cases of simulated disease with the same object have occurred during the war, but most, if not all, the persons concerned were not English, but foreigners or of foreign extraction.

Sir Hermann Weber

Sir Hermann Weber, M.D., F.R.C.P., has died at his residence in London in his ninety-fifth year. He was a remarkable example not only of longevity but also of excellent health and vigor in old age. He practiced until the age of 80, and in the present year contributed a most interesting article to the *British Medical Journal* on the "Influence of Muscular Exercise on Longevity," which followed out the principles laid down in his essay on "Prolongation of Life." He was able to refer to himself as a marked example of his doctrine. He attributed his vigor at this extreme age to his practice of spending daily two or three hours in the open air and walking as a rule 30 and frequently 40 or 50 miles a week. He was the son of a German father and Italian mother. He was educated at Marburg and afterward at Bonn, where he graduated in 1848. His desire to read Shakespeare in the original led him to study English. He came to England, where he was appointed house physician at the German hospital, and married an English woman in 1854. After a period of study at Guy's hospital he became M.R.C.P., and was elected F.R.C.P., four years later. Among his circle of friends were the eminent physicians of a former generation, Addison, Edmond Parkes, Wilson Fox and Hilton Fagge. He was one of the pioneers of the open air treatment of consumption. Not without protest from the more old-fashioned physicians, he sent his patients to winter in the high valleys of the Engadine. He was himself devoted to mountain climbing, and in the interests of his patients explored the Swiss Tyrolese and Italian Alps. His affection and admiration for Parkes led him to present the College of Physicians with the sum of $15,000 to be awarded every third year for the best essay on some subject connected with tuberculosis. He contributed articles on the treatment of phthisis to Quain's Dictionary and Allbutt's System. His unique knowledge of health resorts was embodied in a volume entitled the "Mineral Waters and Health Resorts of Europe" which was later replaced by "Climatotherapy and Balneotherapy," written in association with his son, Dr. F. Parkes Weber. Throughout the war his sympathies were cordially and wholly with his adopted country, where he had worked for seventy-five years. His younger son and all his grandsons fought in the war, and one was killed at Ypres.

Medicine in War

The fourth annual report of the Medical Research Committee has just been published. This committee owes its origin to Mr. Lloyd George, who founded it in connection with the national health insurance scheme. During the war, the committee has given its advice and services to the army in large measure, and consequently the present is largely a war report. Much of the knowledge gained in war will be available for peace, not only by means of the medical history of the war that the committee is producing, but also by means of published papers and researches. Three facts, the committee thinks, stand out today in the domain of medical research. The first is the awakened interest in scientific work and increased recognition of the value of medical research. The second is the remarkable triumph achieved by the bacteriologist in this war. Thanks to his labors, especially in the direction of preparing vaccines, thousands of cases of illness have been prevented and thousands of lives saved. Finally, for the first time the important bearing of physiology on general medicine has received adequate recognition. "The violences offered to the human body in warfare—whether through exertion and exposure, by terror or excitement, in physical damage by lead or steel, or in chemical attacks on it by poison, and not least through the incredible stresses of flying high and fighting in the air—all these have brought many new and urgent calls for precise physiological knowledge."

The Casualties of the War

The following are the total British casualties of the war, including Dominion and Indian troops. The number killed (including those who died from wounds or other causes) is 658,704. The number wounded is 2,032,142. The number missing, including prisoners, is 359,145. In addition there have been 19,000 deaths from various causes among troops not forming any part of the expeditionary forces. Among the wounded are included those who have been disabled on account of illness.

British Prisoners and German Physicians

The recent report of the government committee, presided over by Mr. Justice Younger, on the treatment of British prisoners of war shows the same abominable cruelty with which we have been familiar since the beginning of the war. Referring to the treatment of the men who were compelled to work in mines, there is this passage: "We come finally to one of the worst points, and at the same time one of the most universal, in the management of the mining camps. The provision made for medical attention in cases of sickness and accident is slight at best, although it might in these instances be considered sufficient if it were properly administered. Each camp is visited once or twice a week by a local civilian physician, who is supposed to be responsible for the medical care of the kommando. He is not called on to treat serious cases, which are passed to the nearest regular hospital. But in all mining work, and more especially in the salt mines, constant vigilance is necessary to prevent even the lighter cases from developing serious consequences. Small accidents are common, the men are in no condition of health to be able to disregard them, and in the salt mines they suffer perpetually from eye trouble and from a distressing kind of abscess, both of which are liable to become dangerously infected in the conditions of their work. In many places the physician is clearly convicted of carelessness and perfunctory treatment." The indignation produced in the medical profession in this country by such disclosures is shown by the decision of the council of the Royal College of Surgeons to omit the universities of Germany and Austria from the list of schools from which certificates of professional education should be received. A similar decision seems about to be taken by the Royal College of Physicians.

PARIS LETTER

Paris, Nov. 28, 1918.

Traumatic Shock

The Société de biologie has been devoting some of its meetings to the discussion of the biology of war. The first meeting of this kind was given over to the study of shock and of anesthesia of wounded men in a state of shock.

Dr. W. B. Cannon of the American army, professor of physiology at Harvard, presented an interesting report on this subject. He said that traumatic shock is a general somatic state, occurring after wounding and characterized by persistent low arterial pressure, accelerated pulse rate, pallor, sweating and rapid superficial respiration. The findings in shock may be summarized as follows: (1) Persistent low arterial pressure. This depression is particularly pathognomonic of shock; in fact, it determines the degree of shock. (2) Hyperglobulia in the capillaries. The difference in the number of erythrocytes to be found in the capillaries and in the veins may be as high as 2,500,000 per cubic millimeter. (3) The body temperature varies with the degree of shock. The blood pressure is low when the victim of shock is cold, but rises as the patient warms up. (4) Reduction of the alkaline reserve in many cases of shock. Often this reduction is sufficiently great to create an acidosis, as defined by Van Slyke. (5) Correlation between the rate of reduction of the alkaline reserve and the degree to which the arterial blood pressure is lowered in an individual who is in the state of shock. (6) Difficulties in the regulation of the circulation. If the blood pressure remains low for a long time, nothing can bring about an elevation in pressure. (7) Marked sensibility of the shock victim to anesthesia with ether or chloroform, affecting the already present low pressure unfavorably. (8) Tolerance for nitrous oxid and oxygen as an anesthetic, without fall of blood pressure.

Dr. Cannon is of the opinion that shock is not due primarily to a loss of vasoconstrictor tonus, nor to fat embolism, but that it is the result of tissue traumatism.

TREATMENT

As far as the treatment of shock is concerned, loss of body heat must be prevented and the normal temperature must be restored. Keep the patient covered; give him hot drinks, apply hot water bottles to the body surface, use plenty of covering, even warm air. Raise the arterial blood pressure as soon as possible so as to avoid the harm which may ensue from lack of oxygen. Blood transfusion may be resorted to because that procedure adds oxygen carriers to the circulation. In cases of trauma to an extremity, apply a tourniquet as close to the wounded area as possible, amputate at once just below it and before taking it off. If the tourniquet applied for the arrest of hemorrhage has to be left in place a long time, it should be applied as near to the periphery as possible. The surgeon must decide whether a limb should be conserved or sacrificed, being guided by the viability of the member, the possibility of losing the isolated portion through gangrene, and the danger to the organism as a whole from the absorption of retention products. If ether is used as an anesthetic to operate on a shock patient, then, as soon as anesthesia is obtained, every effort should be made to raise the blood pressure by transfusion or by injection, repeating these procedures during the operation. Preference should be given to nitrous oxid and oxygen anesthesia, in proportions of three to one, preceded by a hypodermic injection of morphin. Care must be taken to avoid profound anesthesia and cyanosis.

NATURE OF SHOCK

Professor Pierre Delbet stated that this meeting would be historic in that it was the first time that biologists, physiologists, internists and surgeons had met together and agreed almost unanimously on the toxic origin of shock. He considered it fortunate that Dr. Cannon, as a physiologist, and hence free from a surgeon's prejudices, had reached the same conclusions as had been presented by Delbet himself as well as by Dr. Quénu. Apparently the victims of shock are poisoned with toxins which may cause death either by rapid action on the nervous system or by acting on the liver or other organs. These poisons do not combine fixedly with the nerve cells; they are eliminated rapidly, and when fresh doses of toxins do not reach these cells, a rapid cure follows. Irreparable damage to the liver is done only after the lapse of some time. There is a period during which a cure can be effected by preventing a fresh supply of toxin from reaching the nervous system, that is, by eliminating the source of the poison. The exhaustion theory of shock precludes surgical intervention. The rule has been to treat shock patients symptomatically, keeping them warm and giving various injections. The toxic theory of shock, on the other hand, demands surgical treatment, excision or removal of the infectious or toxic focus. Traumatic shock does not contraindicate the operation but calls for it as an emergency measure. However, this does not mean that other means of treatment are useless or ineffective.

Drs. P. Duval and A. Grigaut recalled that the toxic phenomena of primary shock are the direct result of intense and rapid nitrogen disintegration of the traumatized tissues. Under normal conditions the tissues store up a considerable amount of nitrogen products, the result of disassimilation, and it is the retention of these waste products which imparts to them a particular toxicity. Under the influence of trauma, the threshold of nitrogen excretion of that particular cell is lowered, and some of the toxic nitrogen reserve passes out into the circulation.

Dr. C. Vincent limited himself to a discussion of primary traumatic shock, the condition which develops immediately after the wounding, and which is connected either with the wound alone or with certain states which are characteristic of the fighting man and yet are not traumas. In spite of what has been said above, shock is sometimes met with at the regimental first aid posts, hence a careful and thorough examination should be made in every case. The fighting man, especially the infantryman, expends an almost unbelievable amount of energy, which probably paves the way for shock. Experience has shown that after several days of fighting, two thirds of the men in an infantry regiment who are not wounded are in a state of low tension, with a very low blood pressure. Only after four or five days of rest will the pressure go over 12. It is quite likely that many of the men in combat are predisposed to shock, because at the time that they are wounded they are so worn out that they are unable to resist it.

Interallied Conference of Scientific Academies

An interallied conference of scientific academies was held in Paris to consider the question of international scientific relations. Delegates were present from the Royal Society of London, the Edinburgh Academy, the National Academy of Washington, the Accademia dei Lincei of Rome, the Académie royale of Belgium, the Imperial Academy of Tokio, and the Academies of Greece, of Serbia, Portugal, Roumania and Brazil. These delegates met with the French members at the Institut, in the assembly hall of the Académie française.

Influenza Contracted in Military Service

The ministry of war has issued a circular stating that influenza is a contagious disease, hence the widow of a soldier dead of influenza contracted while in service is entitled to a pension.

Return of Prisoners of War

For a long time many prisoners of war, military and civilian, have been returning to Paris from Germany. Many of them are in an unbelievable state of mental and physical depression. It is only too apparent that they have been suffering frightfully from hunger. Some of them seem to have fallen into the lowest depths of misery. Most of them are clothed in rags and are shod with wooden shoes. The civilian prisoners apparently have been subjected to greater privations and hardships than the military prisoners.

The military authorities of Paris have taken measures to expedite the distribution of the military prisoners in various hospital centers where they report for physical examination, which is very important if the spread of contagious diseases is to be avoided. A large number of centres de désinfection have been installed in Paris, especially at the Grand-Palais.

M. Mesureur, directeur de l'Assistance publique, stated that 4,000 of the whole number of beds requisitioned by the military authorities will be held for those soldiers who have or who may contract tuberculosis. There are also 1,200 beds provided in special barracks.

Spanish Medical Mission to Paris

A Spanish medical mission, headed by Professor Martinez Vargas has arrived in Paris. They are to deliver a series of lectures at the Paris medical faculty.

Deaths

Dr. Gustave Bouchardat, professeur agrégé in the Paris medical faculty and honorary professor in the school of pharmacy, is dead, aged 54 years. He has been a member of the Académie de médecine, section of physical and medical chemistry, since 1882. His published works are well known in chemical circles. He specialized on the sugars, caoutchouc and synthetic camphors.

Dr. Paul Puech, adjunct professor of obstetrics in the medical faculty of Montpellier is dead.

Gonorrhea from Military Standpoint

This subject was discussed at the recent meeting of the Congrès d'urologie. Dr. J. Janet of Paris stated that there is no doubt that the number of cases of venereal disease has increased since the beginning of the war, but when the number of soldiers in service is considered, these figures are not so startling after all. At the beginning of the war these diseases occurred more often in the zone des armées than in the interior; the opposite is now the case since the institution of sanitary measures in the former and in the zone des étapes. Gonorrhea among combatant troops can be treated only by means of balsams, the injections being resorted to during rest periods. In the evacuation and base hospitals, the customary treatment is employed. Abortive treatment is successful in two thirds of the cases, provided that it is instituted within twelve hours of the appearance of the discharge. When the treatment is undertaken later than this, success is less apt to be obtained. The urethral lesion is treated by means of injections of potassium permanganate, anterior in cases of anterior urethritis, and throughout the entire urethra if all of the canal is involved, in progressive doses from 0.05 to 0.25 gm. per thousand, depending on the acuity of the inflammation. *In acute cases* two injections should be given every day. The injections should be begun at once, no matter what the degree of acuity of the inflammation (in the anterior urethra alone for a day or two in very acute cases of total urethritis). They should never be discontinued when complications arise for, far from being harmful, the injections have a very favorable influence on their evolution.

Dr. F. Cathelin of Paris discussed the importance of this infection from the military point of view and emphasized the necessity of having a more uniform method of treatment of gonorrhea by means of permanganate in the various centers of treatment. A posterior urethritis can be taken care of better after the war. Vaccine treatment is of most value in treating the complications of gonorrhea, but does not have any effect whatever on the disease itself.

Dr. Pasteau of Paris recommended the organization of a genito-urinary service for the armies. He outlined the method of procedure to be followed by these diagnostic and treatment centers, while the troops are moving as well as while they are resting. The treatment of either simple or complicated gonorrhea at the front should be easy and the results satisfactory.

INDIVIDUAL PROPHYLAXIS

So far as prophylactic treatment is concerned, those interested should be impressed with the fact that the precautionary measures provided, whatever they may be, do not absolutely protect them against all infection, either gonorrhea or syphilis. It is far better, from every point of view, to state distinctly that those who have been exposed to infection have always the risk of contracting infection, and that for their own protection, they should seek treatment at once on the appearance of the very first symptoms. The number of centers of treatment should be increased, their permanency insured and their organization improved if better results are to be obtained than is now the case.

Dr. Keyes of New York spoke of the prophylactic methods employed in the American army, and stated that among more than 60,000 cases there were only 2 per cent. of failures.

TREATMENT IN HOME TERRITORY

Dr. Escat of Marseilles discussed the question of the treatment of gonorrhea in home territory and reported the results obtained in 2,254 cases hospitalized at Marseilles; 1,208 of the men had been treated in the barracks infirmary, 692 at the *Centre de dermatologie-vénéréologie* and 354 at the *Centre d'urologie*. The majority of these 354 cases were of the complicated variety. He was of the opinion that the simple cases, or those cases which are rebellious to treatment without apparent cause, might be treated best in the regimental infirmaries. The French method of treatment, by means of large injections, advocated by Janet, can be applied easily and systematically as an abortive treatment, a rapid or an intensive treatment.

Vaccines have not yielded conclusive results, thus making discussion on this subject impossible. The complicated cases should be treated in the *Centres d'urologie*. From the standpoint of therapeutics as well as discipline, it might be advantageous to put all these cases in an annex to the *Centre*. In the cases with acute glandular complications, after the inflammatory crisis has passed or after early and thorough incision, treatment by large injections is still the method of choice. In the prostatic cases, Escat stated that nonevacuating massage is useless as well as dangerous. In cases of grave epididymitis, epididymotomy is the method of choice; it facilitates the resumption of the lavages or injections. If the complications are chronic, Escat would return to duty all patients who have a chronic urethritis without stricture. All chronic cases, with follicular fistulas or cowperitis, no matter how severe, should not be invalided but operated on and made fit for duty. In all cases of gonorrhea complicated by other lesions, such as phimosis, venereal warts, soft chancre, hard chancre, etc., marked advantage often may be gained from surgical intervention. In cases of stricture, Escat has always succeeded in making lavage and dilating the urethra with the necessary precautions.

Marriages

Henry D. Thomason, Col., M. C., U. S. Army, Commanding General Hospital No. 5, Fort Ontario, N. Y., to Miss Adelina O'Connor, at Fort Ontario, September 25.

Jonas Jay Unger, Lieut., M. C., U. S. Army, to Miss Nettie Avidan, both of New York City, recently.

Charles Foster Campbell, Sunbury, Pa., to Miss Grace High, at Dalmatia, Pa., recently.

Deaths

Josiah A. Powless ⊕ **Lieut., M. C., U. S. Army,** Oneida, Wis.; Milwaukee Medical College, 1904; aged 46; an Oneida Indian, and a graduate of the Indian School at Carlyle, Pa.; who went overseas in the summer of 1918, and was on duty with the so-called "Lost Battalion," of the Three Hundred and Eighth Infantry, Seventy-Seventh Division; died, November 6, as the result of a shrapnel wound of the lung received in battle in the Argonne Forest, October 14.

Edward Cross, Kingsville, Texas; Tulane University, New Orleans, 1862; aged 82; a member of the State Medical Association of Texas; assistant surgeon of the Thirty-First Arkansas Rifles, C. S. A., and later brigade surgeon in the Confederate service during the Civil War; formerly physician to the Arkansas School for the Blind, and professor of gynecology in the University of Arkansas, Little Rock; died at his home, about December 8.

Frederick R. Burnham ⊕ San Diego, Calif.; Detroit Medical College, 1877; aged 65; a member of the staff of the Agnew Sanitarium; a director of the Merchants' National Bank, San Diego; for one term harbor commissioner; president of the board of education; president of the local board of health and a member of the state board of health; died at his home, December 11, from pneumonia.

David Coles Carr, New York City; Bellevue Hospital Medical College, 1868; aged 74; at one time a member of the Medical Society of the State of New York; resident physician at the New York Orthopedic Dispensary from 1868 to 1872, and surgeon to the Harlem Dispensary from 1878 to 1882; hospital steward in the Confederate service during the Civil War; died at his home, December 7.

Michael Philip Schuster ⊕ El Paso, Texas; University of Vienna, Austria, 1889; aged 59; a specialist on diseases of the eye, ear, nose and throat; for many years chief surgeon of the American Smelting and Refining Company, El Paso; president of the El Paso County Medical Society in 1905; founder and president of Providence Hospital, El Paso; died at his home, November 15.

Charles Whitney Haddock, Beverly, Mass.; Harvard Medical School, 1879; aged 62; at one time a member of the Massachusetts Medical Society; a specialist on diseases of the eye, ear, nose and throat; ophthalmic and aural surgeon to the Beverly Hospital; medical examiner (coroner) of the seventh district of Essex County; died at his home, December 13.

Died in the Service
IN FRANCE
LIEUT. JOHN W. RENNER, M. C., U. S. ARMY, 1890-1918

Edward Glenn Henry ⊕ **Lieut., M. C., U. S. Army,** Oil City, Pa.; University of Pennsylvania, Philadelphia, 1911; aged 29; who was on duty at Camp Greenleaf, Chickamauga, Ga., from August to October, when he sailed for overseas; died in American Red Cross Military Hospital No. 4, Mossley Hill, Liverpool, England, November 7, from pneumonia.

Julius H. Jacobson ⊕ Toledo, Ohio; Toledo Medical College, 1897; aged 39; professor of gynecology and clinical surgery in his alma mater; surgeon to the Lucas County and St. Vincent's hospitals; in 1918 president of the Northern Tri-State Medical Association; died in the Hotel Biltmore, New York City, December 11, from pneumonia.

Arthur Monroe Wooster, Rockford, Minn.; Minneapolis College of Physicians and Surgeons, 1911; Hamline University, 1911; aged 31; a member of the Minnesota State Medical Association, and president of the Wright County Medical Society; died at his home, November 23, from pneumonia following influenza.

Jacob F. Wollam, Jerry City, Ohio; Hahnemann Medical College, Chicago, 1893; aged 60; a member of the Ohio State Medical Association; also a druggist; postmaster of Jerry City during the administration of President Harrison; died at his home, December 5, from heart disease.

William M. Tuller, Bowling Green, Ky.; Cincinnati College of Medicine and Surgery, 1876; aged 70; formerly a member of the city council and mayor of Bowling Green; vice president of the Wood County Savings Bank; died at his home, December 4, from cerebral hemorrhage.

Joseph Paul Aster Marin, Holyoke, Mass.; Montreal School of Medicine and Surgery, 1889; aged 57; a member of the board of health of Holyoke, and city physician in 1902; in 1898 to 1899 a member of the board of aldermen; died at his home, December 7, from pneumonia.

George William Wagner ⊕ Detroit; Jefferson Medical College, 1894; aged 54; visiting physician to the Harper Hospital; assistant to the chair of medicine in Detroit Medical College; a specialist in internal medicine; died, December 15, from pneumonia following influenza.

William Edca Williams, Rockledge, Ga.; University of Georgia, Augusta, 1910; aged 33; a member of the Medical Association of Georgia; president of the Laurens County Medical Society; died at Soperton, Ga., October 16, from pneumonia following influenza.

James Page Massie, Sandidges, Va.; University of Virginia, Charlottesville, 1888; New York University, New York City, 1889; aged 52; professor of obstetrics in his alma mater in 1898 and 1899; died at his home, December 7, from pneumonia following influenza.

Cassar Smith, Olean, N. Y.; University of Buffalo, N. Y., 1891; aged 52; at one time a member of the Medical Society of the State of New York; for twenty-one years coroner of Cattaraugus County; died at his home, December 8, from cerebral hemorrhage.

Charles Edward Bradshaw, Columbus, Ohio; Cleveland-Pulte Medical College, Cleveland, 1899; aged 47; for seventeen years a practitioner of Corning, Ohio; at one time a member of the Ohio State Medical Association; died at his home, December 6.

Edward Bradford Reemelin ⊕ Cincinnati; Medical College of Ohio, Cincinnati, 1904; aged 38; formerly assistant professor of physiologic chemistry in the University of Cincinnati; died at his home, December 8, from pneumonia following influenza.

John Walter Renner ⊕ **Lieut., M. C., U. S. Army,** Hilliards, Ohio; Ohio State University, Columbus, 1912; aged 28; who entered the service, July 2, and was soon sent overseas; is reported to have been killed in action, in Flanders, November 4.

George Chrisman Rodgers ⊕ Elkins, W. Va.; University College of Richmond, Va., 1900; aged 46; superintendent and chief surgeon of the City Hospital, Elkins; died at his home, October 25, from pneumonia following influenza.

Dietrich Ludwig Bartling ⊕ **Lieut., M. C., U. S. Army,** Bloomfield, Neb.; Chicago College of Medicine and Surgery, 1917; aged 31; on duty at Fort Sill, Okla.; died at that post, October 20, from pneumonia following influenza.

Henry T. Watkins ⊕ Olney, Ill.; Hahnemann Medical College, Chicago, 1883; aged 58; founder and proprietor of the Olney Hospital; died on a train between Vincennes and Washington, December 4, from heart disease.

Roscoe Howland Healy, Denver, Colo.; Northwestern University Medical School, Chicago, 1918; aged 24; an intern in Barnes Hospital, St. Louis; died in that institution, December 7, from pneumonia following influenza.

Robert H. Eanes, Taylor, Texas; Tulane University, New Orleans, 1883; aged 63; a member of the State Medical Association of Texas; for twelve years a practitioner of Waco, Texas; died in Taylor, December 9.

Jonah S. Miron, Far Rockaway, N. Y.; Fordham University, New York City, 1918; aged 24; superintendent of St. Joseph's Hospital, Far Rockaway; died in that institution, October 20, from lobar pneumonia.

John Busby Ury ⊕ **Capt., M. C., U. S. Army,** Defiance, Ohio; Rush Medical College, 1903; aged 40; died at Fort Oglethorpe, Chickamauga Park, Ga., about December 8, from pneumonia following influenza.

William Hodnett Butler ⊕ Fall River, Mass.; Bellevue Hospital Medical College, 1897; aged 51; a member of the visiting staff of the Fall River Hospital; died at his home, October 11, from influenza.

Henry Nicholas Barth ⊕ Metamora, Ill.; Northwestern University Medical School, Chicago, 1909; aged 33; a specialist in internal medicine; died at his home, November 18, from septic endocarditis.

Harrison C. Hopper, Lawrence, Kan.; Jefferson Medical College, 1879; aged 63; at one time a member of the Kansas Medical Society; died at his home, November 29, from carcinoma of the prostate.

Charles Webster Gould, Jr. ⊕ Atlanta, Ga.; Rush Medical College, 1901; aged 45; formerly a practitioner of Fairdale, Ill.; a specialist in clinical pathology; died at his home, December 1.

John Latham Seay ⊕ Whitwell, Tenn.; Louisville (Ky.) Medical College, 1904; aged 36; died in an infirmary in Birmingham, Ala., November 18, from pneumonia following influenza.

James F. Fitzgibbon, Racine, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1895; aged 52; died at his home, December 4, from pneumonia following influenza.

Ira Clark Guptill, Northboro, Mass.; Dartmouth Medical School, Hanover, N. H., 1875; aged 74; town physician of Northboro; died at his home, about December 5.

James A. Carson, Maquoketa, Iowa; Hahnemann Medical College, Chicago, 1881; aged 74; a veteran of the Civil War; died in Los Angeles, Calif., December 3.

Albert Charles D'Vorak, Chicago; University of Illinois, Chicago, 1918; aged 32; an intern in Michael Reese Hospital, Chicago; died December 6, from pneumonia.

Charles Henry Shelton, La Jolla, Calif.; New York Homeopathic Medical College, 1880; aged 64; formerly of Montclair, N. J.; died at his home, December 11.

Sverre T. L. Hartman, Vancouver, B. C.; University of Christiania, Norway, 1906; aged 41; died at his home, November 20, from pneumonia following influenza.

James Elwin Snyder, Versailles, Ill.; Chicago College of Medicine and Surgery, 1912; aged 44; died in Cooperstown, Ill., September 17, from carcinoma of the stomach.

August Herman DeFries, Davenport, Iowa; University of Illinois, Chicago, 1896; aged 61; died at his home, November 30, from pneumonia following influenza.

Harvey Wellington Smith ⊕ Carsonville, Mich.; University of Toronto, Ont., 1880; aged 63; died at his home, November 17, from pneumonia following influenza.

Thomas McEwen ⊕ Hemlock, Mich.; Victoria University, Coburg, Ont.; 1886; aged 58; died at his home, about December 4, following a surgical operation.

Elisha Bennett Burnham, Essex, Mass.; Dartmouth Medical School, Hanover, N. H., 1897; aged 47; died at his home, October 10, from bronchopneumonia.

William Turner Parsons ⊕ Palmer, Mass.; Johns Hopkins Medical School, Baltimore, 1907; aged 37; died at his home, November 30, from pneumonia.

William Ellerbe Pelham, Jr. ⊕ Newberry, S. C.; Tulane University, New Orleans, 1905; aged 39; died at his home, October 6, from pneumonia.

Frederick C. Cox ⊕ Newby, Ky.; University of Louisville, Ky., 1904; aged 38; died at his home, October 24, from pneumonia following influenza.

Guy Halifax Wallace, New York City; University of Toronto, Ont., 1909; aged 32; a specialist in pathology; died at his home, December 9.

Joseph Ward ⊕ Cortland, Ohio; Western Reserve University, Cleveland, 1885; aged 59; died at his home, December 4, from nephritis.

Edward Barney Smith, Brightwood, Va.; University of Maryland, Baltimore, 1907; aged 33; died at his home, November 13.

Thomas Allen Smith, Houstonia, Mo.; Hospital College of Medicine, Louisville, Ky., 1881; aged 66; died, recently, at his home.

Eugene Martin, Chicago, University of Illinois, Chicago, 1889; aged 62; died at his home, November 23, from nephritis.

Frank E. Burns, New Orleans; Tulane University, New Orleans, 1891; aged 49; died at his home, November 25.

Correspondence

"THE BIPOLAR BACILLUS OF INFLUENZAL SEPTICEMIA"

To the Editor:—In THE JOURNAL, Nov. 16, 1918, p. 1700, an abstract from *Policlinico,* Rome, describes the cultivation by Ciauri of a bipolar micro-organism in conjunction with gram-positive rods from the blood and sputum of cases of severe influenza. We have recently isolated from a pleural effusion following influenza a bacterium similar in some respects to the bipolar organism described by this author. The following characteristics were noted: The organism was rod shaped, often oval, gram-negative, with distinct bipolar staining and a tendency to variation in morphology. No motility was observed. It grew on plain agar best at 37.5 C., though not heavily, and aerobic conditions were more favorable than anaerobic. Acid was not produced in glucose, lactose or saccharose agar. Gas was not produced in glucose bouillon. Gelatin was not liquefied and litmus milk was not coagulated or rendered acid. Indol production could not be satisfactorily determined because of lack of growth in the peptone medium. A rabbit injected with 1 c.c. of a twenty-four hour bouillon culture intravenously survived. Intraperitoneal injection of smaller doses into a guinea-pig and several mice was not followed by death. This organism apparently falls into the hemorrhagic septicemia group, differing from most of the members of this group by lack of virulence.

EDWARD STEINFIELD, M.D., Philadelphia.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be *noticed.* Every letter must contain the writer's name and address, but these will be omitted, *on request.*

LITERATURE ON POISONOUS GASES IN MODERN WARFARE

Kindly let me know if you have on hand any literature written on poisonous gases as used in modern warfare.

S. BETAGOLE, University, N. D.

ANSWER.—

Gallo, G.: Eighty-Two Cases of Gas Asphyxia in War, *Riforma med.,* Jan. 27, 1917.

Miller, J.: Blood Changes in Gas Poisoning, *Lancet,* London, May 26, 1917.

Fiessinger, C.: Heart Accidents from Gassing, *Bull. de l'Acad. de méd.,* Sept. 25, 1917.

Tapie, J.: Galloping Phthisis After Inhalation of Asphyxiating Gases, *Progrès méd.,* Oct. 20, 1917.

Parisot, J., and Tixier, L.: Cardiovascular Disturbances with Gas Asphyxia, *Paris méd.,* Nov. 10, 1917.

Mandel, M., and Gibson, W. S.: Clinical Manifestations and Treatment of Gas Poisoning, THE JOURNAL, Dec. 8, 1917, p. 1970.

Peat, G. B.: Effects of Gassing as Seen at Casualty Clearing Station, *Canad. Med. Assn. Jour.,* January, 1918.

Treatment of Gas Asphyxia, Medical Mobilization and the War, THE JOURNAL, April 21, 1917, p. 1190.

Gases in Modern Warfare, editorial, THE JOURNAL, April 20, 1918, p. 1160.

Teuliers, M.: Eye Injuries in the Gassed, *Jour. de méd. de Bordeaux,* February, 1918; abstr., THE JOURNAL, April 27, 1918, p. 1266.

Weller, C. V.: Pathology of Gassing, *Bull. Internat. Assn of Med. Museums,* May, 1918.

The Pathology of "Mustard Gas," editorial, THE JOURNAL, June 22, 1918, p. 1947.

Pierry: Low Blood Pressure and Tachycardia in Gas Asphyxia, *Lyon méd.,* July, 1918.

Lazenby, J. M.: Treatment of Irritant Gas Poisoning, *Brit. Med. Jour.,* Sept. 28, 1918.

Warthin, A. S., and Weller, G. R.: Ocular Lesions Produced by Dichlorethylsulphide, *Jour. Lab. and Clin. Med.,* October, 1918.

Warthin, A. S.; Weller, C. V., and Others: Treatment of Mustard Gas Injuries, *Jour. Lab. and Clin. Med.,* October, 1918.

Derby, G. S.: Effect of Mustard Gas on the Eyes, *Am. Jour. Med. Sc.,* November, 1918.

War Gases and Chemical Warfare, editorial, THE JOURNAL, Nov. 23, 1918, p. 1742.

Norris, G. W.: Toxic Gases in Modern Warfare, with Special Reference to Diagnosis and Treatment, THE JOURNAL, Nov. 30, 1918, p. 1822.

Frescoln, L. D.: Mustard (Yellow Cross) Burns, THE JOURNAL, Dec. 7, 1918, p. 1911.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alabama: Montgomery, Jan. 14. Chairman, Dr. S. W. Welch, Montgomery.

Arizona: Phoenix, Jan. 7. Sec., Dr. Allen H. Williams, 219 Goodrich Bldg., Phoenix.

Colorado: Denver, Jan. 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

District of Columbia: Washington, Jan. 14-16. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

Hawaii: Honolulu, Jan. 6. Sec., Dr. J. R. Judd, Honolulu.

Kansas: Topeka, Feb. 11. Sec., Dr. H. A. Dykes, Lebanon.

Minnesota: Minneapolis, Jan. 7-10. Sec., Dr. Thomas McDavitt, 741 Lowry Bldg., St. Paul.

Missouri: St. Louis, Jan. 28-30. Sec., Dr. G. H. Jones, State House, Jefferson City.

New Mexico: Sante Fe, Jan. 13. Sec., Dr. W. E. Kaser, East Las Vegas.

New York: Jan. 28-31. Albany, Buffalo, New York City and Syracuse. Mr. Herbert J. Hamilton, Asst. Prof. Exams., New York Dept. of Education, Albany.

North Dakota: Jan. 7. Sec., Dr. G. M. Williamson, 860 Belmont Ave., Grand Forks.

Oklahoma: Oklahoma City, Jan. 7-8. Sec., Dr. J. J. Williams, Weatherford.

Oregon: Portland, Jan. 7. Sec., Dr. H. S. Nichols, Corbett Bldg., Portland.

Pennsylvania: Philadelphia, Jan. 7-9. Sec., Mr. Nathan C. Schaeffer, State Capitol, Harrisburg.

Rhode Island: Providence, Jan. 2-3. Sec., Dr. B. U. Richards, State House, Providence.

South Dakota: Pierre, Jan. 14. Sec., Dr. P. B. Jenkins, Waubay.

Utah: Salt Lake City, Jan. 6. Corres. Sec., Dr. G. F. Harding, 405 Templeton Bldg., Salt Lake City.

Vermont: Burlington, Feb. 11. Sec., Dr. W. Scott Nay, Underhill.

Washington: Spokane, Jan. 7-9. Sec., Dr. C. N. Suttner, 415 Old Nat'l Bk. Bldg., Spokane.

Wisconsin: Madison, Jan. 14. Sec., Dr. J. M. Dodd, 220 E. 2d St., Ashland.

Missouri October Examination

Dr. George H. Jones, secretary of the Missouri State Board of Health, reports the written examination held at Kansas City, Sept. 30-Oct. 2, 1918. The examination covered 14 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 24 candidates examined, 21 passed and 3 failed. Fifteen candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Chicago College of Medicine and Surgery	(1917)	80.3
Loyola University (1916) 81.4;	(1917)	86.1
Northwestern University	(1918)	86.6
University of Kansas (1917) 88.5;	(1918)	81.1, 83.7
Central Medical College of St. Joseph	(1899)	75.3
Marion-Sims Beaumont Medical College	(1903)	75.7
National University of Arts and Sciences	(1918)	75.2
St. Louis College of Phys. and Surg. (1913) 81.1;	(1918)	75.6
76.8, 80.3, 80.9, 81.5.		
John A. Creighton Medical College	(1918)	79.7
Meharry Medical College (1918) 80.2, 81.1, 84.1.		
Fort Worth School of Medicine	(1896)	75.1
FAILED		
St. Louis College of Phys. and Surg.	(1918)	70.1, 72.7
Meharry Medical College	(1917)	65.4

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
University of California	(1891)	Penna.
Bennett Medical College	(1914)	Illinois
Chicago College of Medicine and Surgery	(1915)	Illinois
Rush Medical College	(1882)	Iowa
State University of Iowa College of Medicine	(1910)	Iowa
Kansas City Hahnemann Medical College	(1910)	Kansas
University of Kansas	(1911) (1915)	Kansas
Tulane University	(1910)	Louisiana
Michigan College of Medicine and Surgery	(1891)	Michigan
University Medical College of K. C.	(1908)	Kansas
John A. Creighton Medical College	(1915)	Nebraska
Medical College of Ohio	(1889)	Kentucky
Jefferson Medical College	(1898)	Penna.
Meharry Medical College	(1916)	Tennessee

Connecticut Homeopathic November Examination

Dr. E. C. M. Hall, secretary of the Connecticut Homeopathic Medical Examining Board, reports the written examination held at New Haven, Nov. 12-13, 1918. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Two candidates were examined, both of whom passed. The following college was represented:

College	Year Grad.	Per Cent.
PASSED		
N. Y. Homeo. Med. Coll. and Flower Hosp. (1916) 87;	(1918)	89

Book Notices

Walter James Dodd: A Biographical Sketch. By John Macy. Boards. Price, $1.50 net. Pp. 64, with illustrations. Boston: Houghton Mifflin Company, 1918.

Walter James Dodd came to America from England at 10 years of age, and after holding various odd jobs became assistant janitor in the Boylston Chemical Laboratory at Harvard. His chief interest was not in "janitoring," for he followed carefully the work in chemistry with the students regularly enrolled, and was easily able to pass the examinations in the various courses. Later he was appointed assistant apothecary at the Massachusetts General Hospital, continuing his studies in chemistry, and finally passing the state examination and becoming a registered pharmacist. In addition to dispensing prescriptions, the apothecary was official photographer of the hospital, so that Dodd became an expert photographer.

In 1895 were published the first obscure reports of the discovery of the roentgen ray. Mr. Dodd became interested in this work, and was coadjutor in the early work with Dr. Walter B. Cannon on the subject. When Dodd began to work with the roentgen ray, like many other early workers he suffered numerous burns of the hands, and for the next twenty years his hands continued to become more and more crippled and mutilated. It was not learned for several years that the roentgen ray might produce malignant reactions in the tissues. In 1900, Mr. Dodd entered the Harvard Medical School, studying one year, and later continuing his studies at the University of Vermont, where he was graduated in 1908. After his graduation, Dodd was appointed roentgenologist of the Massachusetts General Hospital. In June, 1915, he went to France as roentgenologist with the first Harvard medical unit. Before leaving, it was necessary for him to undergo an operation because of his earlier work with the roentgen ray. He returned to Boston in October, 1915, and seemed to be improving. He lost weight, however, developed enlargement of the glands, and died, Dec. 18, 1916. The laboratory of roentgenology in the Massachusetts General Hospital, it is indicated, will be called the Walter James Dodd Memorial.

The experience of Dr. Dodd is typical of that of most of the early workers in this new field. It is evidence, furthermore, of the way in which men with the true scientific spirit have been wont to surmount great obstacles in their search for scientific advancement, many of them being in every sense of the word martyrs to their professions. The biography of Dr. Dodd is stimulating.

The Medical Record Visiting List or Physician's Diary for 1919. Leather. Sixty Patients per Week. Price, $1.75. New York: William Wood & Co., 1918.

The Physician's Visiting List for 1919. Sixty-Eighth Year of Its Publication. Leather. Price, $1.25. For 25 patients per week. Philadelphia: P. Blakiston's Son & Co., 1919.

These visiting lists conform to the usual style. They are very handy for the keeping of brief records of visits made, engagements for the future and ordinary memoranda. As these books are well known to the profession, it is hardly necessary to do more than state that each is up to its customary standard.

Dental and Oral Radiography. A Textbook for Students and Practitioners of Dentistry. By James David McCoy, D.D.S., Professor of Orthodontia and Radiography, College of Dentistry, University of Southern California. Second edition. Cloth. Price $2.50. St. Louis: C. V. Mosby Company, 1918.

This book deals with the history of roentgenology, including the nature of the roentgen ray and its discovery by Roentgen. The Crookes tube, induction coil, and other apparatus used in producing roentgenograms are described and illustrated. The technic of exposures to secure the best results, with valuable hints on interpretation of dental and oral plates and films, is given. This part of the book is profusely illustrated. The book evidently is intended mainly for the dentist who aspires to become his own roentgenologist, and with this thought in mind the author directs his teaching to the beginner, rather than to the experienced roentgenologist. With this view of the book, it may be recommended without hesitation.

Medicolegal

Death from Pricking Pimple an Accident

(Lewis v. Iowa State Traveling Men's Association (U. S.), 248 Fed. R. 602)

The United States District Court, in Iowa, holds that where a man insured by the defendant association died from intentionally pricking a small pimple on his upper lip with a gold scarf pin that he took from his necktie, his lip at the place becoming immediately infected with staphylococcic infection from the scarf pin, which infection spread and caused his death in a few days, it must be considered that he died as the result of bodily injuries received "through external, violent and accidental means," within the terms of his insurance policy. The court says that it may be taken as settled by the great weight of authorities that, under language of this kind in a policy, it is not sufficient that the result shall be accidental, but the "means" must be accidental, as well as the result, which the court thinks was true in this case. If the injury resulted from the pin alone, and there was no proof that the pin was infected, the accidental result would not be covered by the policy; but the insured clearly used something that he did not intend to use. He used not only the pin, but an infected pin—a poisoned pin. This infection was such that it could not, in the nature of things, be discovered by him without perhaps a microscopic investigation. In the court's opinion, the means were clearly accidental. Nor was the defendant exempted from liability under its general convenant to pay, by a provision in its by-laws that the "association shall not be liable . . . for accidental death . . . resulting wholly or partially, directly or indirectly, from . . . local or general infection" (except when such infection or inflammation results from a visible or open wound caused by external, violent and accidental means). The fact that the cocci entered the wound in its making, as agreed by the parties, ought not to make any difference in the construction of this provision of the contract.

Illegal Prescribing of Narcotics

(Commonwealth v. Noble (Mass.), 119 N. E. R. 510)

The Supreme Judicial Court of Massachusetts, which holds that a verdict of guilty returned against the defendant on all the counts must stand, says that the defendant was charged in ninety-six counts in the indictment with unlawfully prescribing narcotic drugs, including morphin, cocain and heroin, when not obviously needed for therapeutic purposes, to persons known to the defendant to be habitual users of such drugs, in violation of Section 2 of Chapter 187 of the Statutes of 1915. The commonwealth offered evidence that any method of treating a drug addict not under the complete control and supervision of the physician, by prescribing narcotic drugs to be administered by the patient, had no justification in the practice of medicine, and that under such a course of treatment the patients were free to go from one physician's office to another and thus secure a supply of such drugs as they desired. There was also evidence that the defendant prescribed morphin and cocain combined, that cocain was prescribed for habitual users of that drug, and that such methods of treatment were improper and without justification; that the doses prescribed were excessive in amount and contrary to the legitimate practice of medicine; that the system followed by the defendant was to prescribe 50 or 60 grains of morphin sulphate to each patient as the initial prescription; and every few days thereafter a similar prescription, calling for a single grain less than the preceding prescription, would be issued to the patient; and that in many prescriptions a quantity of cocain would also be prescribed and reduced in the same manner. Testimony of the defendant, in support of which he offered expert testimony, that the treatment he gave was obviously necessary for therapeutic purposes, was met by the testimony of experts who said that in their opinion such a prolonged reduction treatment was not necessary; that even a sudden withdrawal of the drug was not dangerous, and that they had never known of a case resulting fatally therefrom.

The defendant contended that, being the attending physician in the cases referred to in the indictment, he was the only person who could then determine the obvious necessity for the therapeutic treatment after examination and history of the patient; that his judgment in the matter was conclusive and could not be reviewed or inquired into in a court of law in a trial of an indictment of this kind; and he requested the court so to rule. The presiding judge refused so to rule, and the only question presented for the determination of the supreme judicial court was whether the defendant was entitled to the ruling above referred to, which this court holds that he was not; that the presiding judge rightly refused his request.

The statute provides, in Section 3, for the protection of reputable physicians who act honestly and in good faith. And while the question whether the drug is or is not obviously needed for therapeutic purposes in a given case is a question for the attending physician, and he is not to be held liable for a violation of the statute if he acts in good faith, it does not follow that his judgment in the matter is conclusive and cannot be reviewed or inquired into in a prosecution for an alleged violation of the statute. In the case at bar, on conflicting evidence and the reasonable inferences to be drawn therefrom, it was a question of fact whether the defendant believed the drugs prescribed by him were obviously needed for the treatment of the persons for whom he so prescribed, or whether he was engaged in the business of issuing prescriptions to habitual drug users at $2 each, solely for his pecuniary gain and without reference to the question whether such drugs were obviously needed or not by those who obtained them. The question whether the defendant exercised his honest professional judgment and acted in good faith, or whether he intentionally violated the statute, was a question of fact for the jury, to be determined by them as men of practical sense and sound judgment.

Infirmary Not Liable for Negligence

(Cook v. John N. Norton Memorial Infirmary (Ky.), 202 S. W. R. 874)

The Court of Appeals of Kentucky affirms a judgment in favor of the defendant, which was sued for damages because, through the alleged negligence of the defendant, its nurses, agents and servants, a patient fell from a window and sustained injuries resulting in her death. The court says that an examination of the authorities has convinced it that a purely charitable institution, such as the defendant's hospital was described in the pleadings to be, is not amenable to its patients, although paid ones, for any damages they may have sustained growing out of alleged negligence, although such negligence might consist in the violation by the hospital of some duty imposed by either an express or an implied contract. Some of the cases relieve the defendant of liability on the ground that the doctrine of respondeat superior, or let the master or superior answer, does not apply to purely charitable institutions; but this court has not dealt with that feature of the case, since the conclusion it has reached renders it unnecessary. Neither has this court overlooked the fact that some of the cases relieving the institution of liability impose on it the duty of exercising care in the selection of its servants, which, if it should negligently fail to do, it would be liable. But this court has found it unnecessary to consider that proposition, because there was no allegation presenting that issue. Nor does this court pass on the question of the liability of such institutions for conduct purely tortious, affecting members of the public who are strangers to them. This court would also not be understood as holding that such institutions would not be liable on their contracts made for the purpose of protecting, looking after, and taking care of their physical property, or in supplying themselves with those necessities required for their continued maintenance, since on such contracts they are liable, as are other individuals and corporations.

Society Proceedings

COMING MEETINGS

Society of American Bacteriologists, Boston, Dec. 30-Jan. 1.

AMERICAN ASSOCIATION FOR THE STUDY AND PREVENTION OF INFANT MORTALITY

Ninth Annual Meeting, held at Chicago, Dec. 5-7, 1918

(Concluded from Page 2102)

The Springs of A Nation's Life

Dr. Edward P. Davis, Philadelphia: To secure a healthy infant population, it is absolutely essential that the conditions of life be such that early marriage can be encouraged. A living wage, sanitary and comfortable means of dwelling, civic sanitation, including a pure and reasonable food supply, and all those agencies which make for physical, mental and moral hygiene are of the utmost importance. No greater curse on the nation in the care of its infant population could be devised than the presence of a large standing army. In continental Europe, marriage is forbidden to men of military age unless they possess a certain stipend. The result has been indiscriminate immorality, and in order to save its population the state is obliged to care for the mothers in hospitals and to rear the children in foundling asylums. The crying need in the prevention of infant mortality is better obstetrics. In order to make improvement in obstetrics possible, the economic and other factors referred to must be present; but without better obstetrics, these factors will be of little value. The encouragement of early marriage in healthy individuals is a step of primary importance; marriage among those physically unfit is to be discouraged, and, if possible, forbidden. It may not yet be possible to require physical examination of men and women before marriage, but the need for such examination is evident.

Education of the laity, nurses and physicians in matters concerning the increase and care of the population is of paramount importance. Why should not a brief, clear statement of symptoms of dangerous conditions arising in pregnant women be posted in rooms used only by women? Why should not the attention of expectant mothers be called to the dangers of miscarriage and convulsions and hemorrhage occurring during pregnancy? Much has been done to educate medical students and physicians for better obstetrics; but economic conditions and lack of hospital facilities have been such that physicians cannot afford to do, in a large private practice, the careful work accomplished in good hospitals. The modern obstetric trained nurse has saved the lives of thousands of infants.

DISCUSSION

Dr. Joseph B. DeLee, Chicago: No matter how much improvement we make in a housing community, social service, etc., unless we are able to teach the public the necessity for better obstetrics and to get most of the people thoroughly acquainted with the needs of the child-bearing woman, we shall fail to produce any remarkable reduction in infant mortality. The prevention of fetal deaths during pregnancy and labor may be summed up in the words "better obstetrics." Grace Meigs' investigation of the U. S. census report shows that child-bearing is as dangerous now as it ever was within our memory, and that the deaths from child-bearing are second in number only to those from tuberculosis.

Conservation of Life of the Unborn and Newly Born Child

Dr. Rudolph W. Holmes, Chicago: It would be desirable that every college for young men and women should have compulsory instruction on the influences of heredity, and give instruction on the general principles of the rights of the unborn. The legislative control of marriages of those afflicted with inheritable disease, requiring a medical certificate from one or both parties, is theoretically correct; in practice it is of questionable value. At present, control of mental defectives is abhorrent to the uneducated mind. Conferences should be held covering the general problem of eugenics; suggestive courses should be given to prospective mothers and to young fathers, that they may meet their responsibilities with intelligence and knowledge. I would have a properly equipped maternity hospital with divisions covering the various needs of the prospective mother and her child before and after its advent into the world. I doubt the expediency of having independent centers.

An ideal center would comprise these divisions: (*a*) There should be a social investigator who should visit the home and determine the true economic need of the family. (*b*) Opportunity and encouragement should be given to all prospective mothers to avail themselves of the antenatal clinics. (*c*) At the time of labor the record of the patient should be transferred, or at least made available, to the maternity department. (*d*) Every woman, before leaving the maternity, should receive positive instructions for her return for a postpartum examination—for recommendations for her own welfare. (*e*) There should be an infant welfare department, including an adequate department for the preparation of foods for infants. (*f*) Systematic courses of lectures should be instituted covering all the phases entering into the questions of personal hygiene, marriage relations, matters cognate to the bearing of children, the care of women in pregnancy, and the care of children thereafter.

The Minnesota Plan for the Establishment of Infant Welfare Clinics in Small Towns

Dr. E. J. Huenekens, Minneapolis: The Division of Child Conservation of the Minnesota State Board of Health has been in existence for six months. In June, 1918, at a meeting attended by all the pediatricians of the state, it was recommended that this division be established and that infant welfare clinics be begun in the smaller communities of the state. Well organized clinics had been in existence for a number of years in Minneapolis, St. Paul and Duluth, so that these places did not have to be considered. It was deemed advisable to establish clinics only where there was a local demand and some kind of local organization that could make the preliminary preparations. This is our method of procedure: When a request for a clinic is received, the head nurse of the division visits the community, explains the object of the work, advises what is necessary in the way of equipment, meeting place, volunteer assistants, etc., and a day is set for the clinic. The advertising of the clinic is left to the local people, and consists of notices in the newspapers, posters, announcements in the churches and schools, and occasionally a house-to-house canvass by block workers. On the day before the clinic, the head nurse again visits the community to make sure that all preparations have been made. In a letter to the local physicians, inviting them to attend the clinic, the director has carefully explained that healthy babies, as well as sick ones, up to the age of 5 years, will be received, though children over that age will not be excluded; advice will be given as to proper diet, especially as to the value of breast feeding, and directions as to clothing and general hygiene; if any pathologic conditions requiring medical or surgical care are found, the patient will be referred back to the family physician for treatment.

Until the next legislature meets, the plans are on a temporary basis, the director being paid per diem, and two full time nurses employed. The budget to be placed before the next legislature, which meets in February, calls for a director on a half time salary and an assistant director on full time salary, three full time nurses and a stenographer and clerk, a total of $15,000 a year. One of our difficulties is to obtain nurses with public health training for these communities. The University of Minnesota and the Minnesota Public Health Association are now cooperating and have established a special four months' course in public health nursing for registered and senior nurses. Until we have sufficient graduates from this course, we intend to have one of our nurses spend several weeks initiating the new community nurse in her duties. The ideal solution for the future would be the establishment in every county, or even smaller units, of full time health officers, trained in infant welfare work, as a part of their public duties.

Rural Work for Infant Welfare in Canada and Other Countries

Dr. Maurice MacDonald Seymour, Regina, Sask.: In the provinces of Canada the effort to reduce infant death rates in the rural districts has consisted of: 1. The establishment at rural points of municipal hospitals subsidized by the government. 2. The appointment of medical men at a salary by municipal councils to serve the rural communities. 3. The conducting of child welfare clinics and exhibits, lectures, etc., at rural centers, more particularly in connection with fairs, when most publicity can be secured. 4. Wide distribution of literature dealing with the care of the baby. 5. The adoption of a system of rural public health nursing, which will be greatly increased in the near future. 6. A government maternity grant to expectant needy mothers in rural districts. 7. Education of the public and wide distribution of literature on the subject of infectious diseases, particularly with regard to the venereal diseases.

In order to improve the situation, the adoption of these measures is to be strongly recommended: 1. A system of dominion-wide training, registration and thorough supervision of midwives. 2. A general system of rural public health nursing, with particular reference to child welfare and prenatal care. 3. The providing of free treatment for all syphilitics by means of cooperation between government and municipal authorities. 4. A more general provision for government aid for maternity cases.

AMERICAN PUBLIC HEALTH ASSOCIATION

Forty-Sixth Annual Meeting, held in Chicago, Dec. 8-11, 1918

(Continued from page 2100)

Organization of Forces Against Influenza

Dr. M. Nicoll, Jr., New York: The general mortality caused by this unknown disease has never been equaled in the country as a whole. This unknown disease kills by secondary pneumonia, usually of a peculiar bronchopneumonic type and due to a variety of organisms, including probably the so-called influenza bacillus. The uncomplicated disease causes a marked leukopenia, together with a profound toxemia, with a tendency toward the production of hemorrhage. The age of special susceptibility is that of young adult life. Among pregnant women it is especially fatal. Those who go to bed and remain there, even with ordinary nursing care, until at least a week after the establishment of full convalescence, will in the large majority of cases recover. Strict quarantine of groups of people has been successful in keeping out the disease.

Dr. William C. Woodward, Boston: The following measures have been adopted for the prevention and spread of influenza: reporting of the disease, the use of masks, the use of vaccines, hospitalization, regulation of the use of common drinking cups in restaurants, lunchrooms, etc.; restriction of crowding; education.

Reporting the disease gives a clue to its prevalence in times of epidemic and serves as a guide in taking measures for the prevention of the disease.

Dr. W. O. Sherman, Pittsburgh: I believe that there is sufficient evidence at hand to warrant us in believing that from a prophylactic standpoint there is some virtue in the use of vaccines in reducing the severity of influenza.

Dr. John Dill Robertson, Chicago: Many places of amusement were closed during the epidemic of influenza to give the people of Chicago more sleep. I believe sleep is the greatest regenerating agent known to mankind. The better class of theaters were not closed, because in them ventilation was good, and such places were used as centers of education for instructing the public regarding the epidemic.

Dr. H. O. Jones, Chicago: The consensus of opinion is in favor of keeping the public schools open during an epidemic of influenza for the following reasons: A better knowledge of existing conditions can be had when the schools are made a source of information as to sickness among the children and their families. It would be possible to supervise the children and keep many of them under better conditions during the school hours than if they were allowed to stay at home and run in streets and alleys, or play on premises where persons sick with the disease lived. We have an organized staff of physicians and nurses for medical inspection of schools.

Dr. Royal S. Copeland, New York: At the peak of the epidemic the death rate in Philadelphia was 140, Baltimore 120, Boston 82, Buffalo 80, Newark 55, and New York 47. For the combined weeks of the epidemic Philadelphia had 55 per 1,000, and New York had 25. So, after all, bad as it was, with 21,000 people dying in our city, it might have been worse.

One Sunday, as I sat in my office, one of the wealthy men of the city and owner of a large department store called me on the phone. He said, "Is this the health commissioner?" I replied, "Yes." He said, "If you do not close the schools and theaters tomorrow you will be indicted." I asked him why I should close the schools and theaters, and he replied, "You must think I am a fool"; and I said, "I am sure you think I am one if you think I should close the schools without good and sufficient reasons." I told him that if we closed the schools it would be equally necessary to close the department stores with their insanitary subbasements, their bargain counters, their overloaded elevators, etc., and the conversation ended. You will be interested to know that after I gave my reasons to this gentleman who differed with me, on last Sunday I dined with him, and he assured me that I was the greatest health officer the world has ever known. As a matter of fact, we did not close the schools and theaters. The very night that this department store man called me up Mr. Hearst called me and said, "This man, who is a large advertiser, wants me to make an attack on you. Will you tell me why you did not close the schools and theaters?" This is what I told Mr. Hearst: The most important part of disease control is the public school system. We have a million schoolchildren in New York, and 700,000 of them come from tenement homes, the poorest homes on earth. It will be better for these children to be permitted to go to school where the schoolhouses are sanitary and are under the strict regulation of the everyday system of disease control than to permit them to linger in the school yards or in the basements, etc. It was better for these children to be attending school than to be at home under unpleasant and unhygienic surroundings. If any child showed symptoms or signs which indicated the possibility of influenza, that child was put in a room by himself until examined by a nurse or by a doctor to discover whether he or she had influenza, and if found to have the disease he was sent home under the care of the board of health, and a board of health doctor or nurse would find out whether the family had a family physician, and if so, whether there was a possibility of isolating and protecting other members of the family. If not, the child was to be placed in a hospital where it could be given care. It is a great deal better to care for children in this way than to turn them loose on the streets to play where they will.

As regards theaters, I never had any doubt about them except the moving picture show. We put a padlock on the unventilated show and used the first-class theaters as places for public health education. Each night some one appeared before the curtain and delivered a short talk to the people, telling them there was no necessity to be frightened, but that coughing and sneezing were the ways by which the disease was transmitted to others, and that they must not cough and sneeze in these places. If they did, they were to be ushered out of the theaters. We made use of these talks to great advantage in promulgating public health education.

A concrete problem in the city of New York is that of the subway. We had conferences with all of the big merchants of New York City and decided to "stagger" hours of travel; that is, we opened and closed places of business according to a certain system, varying the hours of opening in the morning and closing in the evening in different establishments, and this materially reduced the peak of travel in the subway and undoubtedly lessened very materially the number of cases of the disease.

The Rôle of the Hand in the Distribution of Influenza

Col. Charles Lynch and Lieut.-Col. James G. Cumming, Washington, D. C.: The causal organisms of sputum-borne diseases, resident in the mouth and nose, leave the body of the infected through these orifices and enter the noninfected through similar channels. The vehicles for the transfer of germ-laden saliva from and to the mouth and nose are the hands and eating utensils. Crowd diseases have their origin, to a large extent, in the constant accumulative contamination of intermediate objects, which are the distributing centers of the infection for many hands and many mouths. Food may be infected by contaminated hands and then spread the sputum-borne infections, as well as the intestinal-borne infections. In all infectious diseases there are major and minor routes of transmission from the sick to the well. In military life the mess-kit wash water has proved to be the major route, and intermediate object conveyors by hand touch the minor route. Droplet infection is subsidiary to both, because explosive outbreaks do not result from droplet infection, and as far as mouth pathogens are concerned, 18 inches is about the maximum distance that plates on a level with the mouth can be infected by droplets expelled through the act of coughing. Moreover, since the weight of these droplets (even the finest spray) is such that they fall rapidly, the probability of infection by the flight of organisms is remote. It is true that the chain of both direct and indirect transmission may be broken in several ways; one of these is by wearing the mask. This acts in two ways: It prevents droplets from being expelled from the mouth and it also prevents the hands from being put into the mouth. On this basis the value of the face mask may be emphasized. Its value, however, lies in the fact that it serves as a barrier between the hand and the mouth rather than between the mouth and the outside air. The relative importance of this face mask to clean hands is just about the same as in the case of the surgeon who would wear a mask but neglect to wash his hands. In order for the mask to be effective, the wearer must wash his hands before it is removed.

DISCUSSION

Dr. W. H. Kellogg, San Francisco: Gauze masks were given a thorough trial by an ordinance enforcing their use in San Francisco. Beginning with the use of these masks there was a rapid decline in the number of cases of influenza. The experience of Los Angeles has proved that the wearing of masks is a great preventive of the disease. In that city, where they did not use masks, they had a much larger number of cases than in San Francisco. A properly made mask affords efficient protection against droplet-borne infections.

Dr. Woods Hutchinson, New York: The San Francisco people were asked to wear masks in the interest of public health and for public safety. They cooperated with the public health authorities with the result that there was a great reduction in the number of cases of influenza.

Dr. A. J. McLaughlin, Assistant Surgeon-General, U. S. P. H. S., Washington, D. C.: I feel that the question of organization by the federal health forces in this country to meet this great national crisis and to face the situation presented has some extraordinary features. In the first place, if we search the history of this country we shall not find a parallel in the appalling loss of life either in its morbidity or mortality in any epidemic of any kind that has visited the United States. An epidemic of yellow fever with the loss of 1,000 lives spread over considerable territory would throw the whole country into a panic. A dozen cases of plague in a seaport town would cause the same kind of excitement; but it is remarkable to see the placidity with which the people generally have taken the almost sudden loss of 300,000 lives.

In facing the problem of public health, the first consideration is the distribution of the disease, and in considering an epidemic it is very essential to have a trained personnel to assist us in the prevention of the spread of the disease. In this epidemic a remarkable characteristic was that the great majority of availables, medical and nursing personnel, were already in the Army or Navy, so that the available personnel from which to draw was limited. Our next difficulty was the lack of accurate knowledge of the cause and transmission of this disease, and we may as well admit it. There is also a lack of biologic agents with which to prevent the disease, and until we have exact knowledge of the etiology and transmission of the disease we shall not be able by laboratory methods to develop those biologic agencies for prophylaxis, diagnosis and treatment of the disease. We have not acquired sufficient knowledge to know the cause of the disease and then develop in our laboratories some biologic products or agencies that will tell us which man is immune and which is not immune; nor have we an agency that will make people immune or an agent that will cure the disease after a man has become infected. These things are possible only when we get an accurate knowledge of the cause and transmission of the disease.

Our lack of knowledge of the etiology and transmission of the disease makes quarantine measures peculiarly futile. Maritime quarantine is the most exact of quarantine procedures with diseases such as Asiatic cholera. Maritime quarantine is not, as was called in the old days, a sieve but a dam to the entrance of infection. Quarantine against influenza, of which we do not know the cause, makes it possible for carriers to pass any quarantine. Quarantine of the ill is the obvious thing to do. By making the ill individual safe we are quarantining the least active and dangerous of the carriers of the disease. For one ill individual there are hundreds of others not quarantined. We are wearing masks as a protection to individuals. They are worthy of trial.

Many of the measures that have been suggested are not practicable. Restrictive measures, which have been criticised by some, although pretty generally employed by three fourths of the health officers to restrict gatherings of people, are based on sound general principles, and in the absence of any definite knowledge, such as we have of measures against cholera or yellow fever or plague, I would ask you to act on general principles in considering this as a contagious, communicable disease, and educate the people in personal hygiene, to prevent gatherings of people in close contact where greater spread of the infection will occur. We are forced to this by our lack of accurate knowledge. During this epidemic there were sections of the country that were absolutely stripped of physicians, especially in agricultural states, like Nebraska and North and South Dakota, where the small medical population had been taken into the Army. In those states it was necessary to bring in physicians from the outside; but we tried to avoid robbing Peter to pay Paul by organizing federal forces on state lines, so that in every state there was a representative of the United States Public Health Service, either a state health officer acting in that capacity or an officer of the service serving with him in the state capital, to handle relief which the federal government was able to give. With the state health officer and public health officer we had a representative of the American Red Cross appointed for each state. It was necessary to have this kind of organization in order to utilize the limited personnel to the best advantage, because from a central point like Washington it was quite impossible to estimate the relative urgency of calls two or three thousand miles away, whereas the man on the spot knew and could investigate the urgency of these calls and distribute his personnel to the best advantage.

The primary necessity of public health campaigns of this kind is to get accurate knowledge of the prevalence of this disease. Influenza should be a reportable disease, and in epidemic times it is not so essential to depend entirely on physicians. If you establish headquarters or branch headquarters in number according to the population of cities, the calls will come in; and if you have your medical nursing and other relief forces available at headquarters, you will be kept very busy in some places and do a good deal toward preventing the spread of the disease. It is good policy to institute house-to-house inspection and make a canvass for the sick. In the city of Detroit they used 200 schoolhouses when the schools were closed and used the schoolteachers for making house-to-house visits, and in three days these schoolteachers made 2,000 visits in getting information, and reporting to the physicians, which is a very slender reed to lean on when the physicians are so busy and are not getting time to sleep. By this organization of the public health service, while it was largely limited to the extension of sick relief and nursing relief, we were able to do the best that could be done under the circumstances, and at that time the work went along quite smoothly by utilizing the state health officers in cities where we had no representative except the appointment of a field director under the Public Health Service.

Dr. Louis I. Harris, New York: The reorganization of the various health forces of the country for future emergencies and for protecting and caring for recrudescent cases of influenza is very essential. There should be adequate appropriations of money by federal, city and state organizations, so that the work of prevention and treatment can be carried out on a scale commensurate with the importance of the problem.

The Work of the Illinois Influenza Commission

Dr. C. St. Clair Drake, Springfield, Ill.: From the onset of the epidemic, up to and including November 30, reasonably accurate reports from 1,348 Illinois health jurisdictions, within which is embraced 60 per cent. of the total population of the state, show 193,885 reported cases of pneumonia and influenza, 53,000 of which were in Chicago. In the same areas the reported deaths numbered 13,466, of which 9,129 occurred in Chicago.

It was found that no preventive vaccine had been used in twenty-one counties, and that it had been employed only to moderate extent in seventy-two counties. Only four counties in the state claimed its general employment. In addition to the vaccine furnished by the Illinois Influenza Commission and the Chicago Health Department, ten others were used.

As to whether or not these vaccines had served to prevent the spread of infection, nineteen counties offered no definite opinion, twenty-nine answered in the affirmative, twenty-seven were of divided opinion, and sixteen regarded the vaccines as of no preventive value.

Regardless of definite opinions as to the general value of vaccines, based on the experiences of these counties, the following figures were gleaned from these very interesting but highly unreliable questionnaires: counties in which there were no cases after vaccination, 23; counties claiming partial protection, 7; counties in which the severity of the disease was decreased by vaccination, 21; counties claiming prevention of pneumonia but not of influenza by vaccination, 1; counties reporting influenza after vaccination, 24; counties claiming pneumonia after vaccination, 4; counties claiming deaths after vaccination, 4; counties claiming absolutely no preventive value, 4; counties claiming disease increased by vaccination, 2.

Influenza at Great Lakes Naval Training Station

Dr. Owen J. Mink, Great Lakes Naval Training Station, Ill.: When influenza arrived at the Great Lakes Naval Training Station, the incidence increased with explosive violence for about five days. For about four or five days it reached the peak, and for about five or six days more it began to decline, and in two weeks the epidemic began and ended. I have plotted the curves of three of the largest Army camps and they have followed exactly the same curve. These curves indicate that in the average fatal case of influenza the patient lives about seven days before the end. It was very evident that this condition of affairs was not going to occur in civil life. The epidemic explodes in the big military camps, but it does not pursue this course in civil life. The rest of the curve is more gradual; the peak is held slightly longer, and the decline is much more gradual. A cure that covers two weeks in a military camp covers probably two months in civil life. From our figures you can refute almost any theory with regard to influenza that any one wants to advocate. It has been said, for instance, that influenza depends on the number of men in the unit in which the men live. Our camp is composed of units of three in a tent or seventy-five in a barracks, and between these two extremes we have units of twelve who are in contact with no one else outside, that is, men in detention. We have units of twenty-four, sixty, seventy-five, and some units of 150. Taking the several regiments, the largest incidence rate for the epidemic falls roughly between 200 and 300 of 1,000-man regiment, and before the epidemic was over, between 200 and 300 would contract the disease. One tent camp had an incidence of 300 per thousand; one camp composed of seventy-five men (a barracks) had an incidence of a little over 200.

I have no criticism of the mask, as Dr. Weaver intended it probably should be used. My figures are on the mask as it is used. The question came up as to the use of masks among our hospital corps who attended the sick. The medical officer of the regiment handles his own affairs, so that if he was an advocate of the mask he would have the hospital corps men use it. If he did not believe in the mask he did not have the hospital corps men use it. I asked him to keep track of those who used the mask and of those who did not and then to tell me what number of the hospital corps men developed influenza and what number did not. Of the men who used the mask, 8 per cent. developed influenza. Of those who did not use the mask, 7.75 per cent. developed influenza. I should not want to put the blame of the extra 0.25 per cent. on the mask, but the point I wish to bring out is that the mask seemed to have very little influence on the incidence of the disease. Another point of importance in connection with the mask is that long before the influenza epidemic began at the Great Lakes, it became the habit for dentists while operating to put on gauze masks, presumably for the protection of the patient, so that before and during the epidemic our dental officers wore masks, the ordinary influenza mask, and as near as we could determine, and these men had no particular association with the disease, certainly not as much as the hospital corps men, these dental officers developed influenza to the extent of 30 per cent. It is unfortunate that I cannot give you something constructive about the mask, but I believe it is better for you to know these things than not to know them.

Appointment of Committees

Four committees were appointed and presented tentative reports. One committee considered administrative measures; the second administrative measures for relief during the influenza epidemic; the third considered the use of biologic products or vaccines, and the fourth considered the history and statistics of the epidemic.

After a thorough discussion of the papers and reports submitted during the meeting, the following committee was appointed by the association and instructed to prepare a final report for publication as soon as possible as a guide for health officers and physicians generally: Dr. William A. Evans, Chicago, chairman; Dr. D. B. Armstrong, Framingham, Mass.; Dr. W. C. Woodward, Boston; Dr. William H. Davis, Washington, D. C., and Dr. Edward W. Kopf, New York.

Report of the Committee on Administration for Relief During the Influenza Epidemic

Dr. William C. Woodward, Boston: Your committee was charged with the formulation of certain principles for the guidance of health officers in communities for administrative measures and for the relief of epidemic conditions with special reference to influenza. Under general rules the committee suggests compulsory reporting of cases so far as it enables the relief measures to be directed to particular cases that may be reported, and in mentioning compulsory reporting we refer to the matter of isolation and placarding, calling attention to the fact that so far as isolation is compulsory it may lead to a diminished efficiency in reporting, so that while the committee recommends isolation by cooperation and education, it recommends that it be carried to a point where it does not diminish the willingness of the physician to report, and the same principle holds true with respect to placarding. Under preliminary measures the committee recommends the distribution of resources, including physicians, nurses, social workers, nurses' aids, clerks, domestics, laundresses, automobiles, and volunteers of all kinds. The local authorities should keep in touch with state and national agencies.

Report of the Committee on Bacteriology and Vaccines

Dr. William H. Park, New York: Your committee reports that the epidemic disease known as influenza is believed to be due to an undetermined organism which causes an infection that lowers the resistance of the body as a whole and of the respiratory organs in particular. This allows the invasion of other pathogenic organisms. The most important complicating infections are due to influenza bacilli, different strains of pneumococci, different strains of streptococci, etc. In each case one or several micro-organims may be present. In different portions of the country a dominating variety of organism has been found to differ.

Assuming that the cause of the epidemic is an unknown virus, it does not seem possible at present to prevent the primary disease by vaccination with known organisms. Against the secondary infections there would seem to be theoretical basis for the use of vaccines prepared from organisms responsible for the complications that may develop in various localities at various times.

DISCUSSION

Dr. James W. Inches, Detroit: The wearing of masks by the laity on the streets and in public places is of doubtful value. I regard the wearing of masks on the streets as a pure fake. Detroit was closed up for sixteen days during the epidemic. When the theaters and other places were closed in Detroit it deprived the board of health of the opportunity of affording the people education in regard to the epidemic. When everything was wide open the number of cases of influenza was less.

Dr. James A. Hayne, Columbia, S. C.: On receiving a telegram from Surgeon-General Blue regarding the pandemic of influenza, the state health officers of Virginia, North Carolina, South Carolina and Georgia held a conference and issued simultaneously an order for closing, so that every single school, church, theater, moving picture show, etc., was closed, and the closing of these places materially lessened the number of cases of influenza and the death rate. When people assemble in large crowds there is certainly a greater conveyance of droplet infection than if they do not. Eighty per cent. of the population of America is rural, and it is no easy proposition to formulate rules and regulations for the different rural communities. I heartily approve of closing in times of epidemic.

Dr. Roy K. Flanagan, Richmond, Va.: In Richmond, we closed the schools, but what was accomplished by it, I do not know. The results in Richmond compare favorably with other cities in regard to death rate. The death rate was lower in Richmond than in most cities on the Atlantic Seaboard. It was 3.8 per thousand in August and 4.2 per thousand of deaths in the months of September, October and November. There is an epidemic prevailing at present, but the second exacerbation is milder.

Dr. Charles V. Craster, Newark, N. J.: The association should be slow in condeming the use of the gauze mask, because its value has been demonstrated in many instances in preventing bacteria from entering the upper respiratory tract. It is advisable to stop persons from crowding together. Droplet infection is minimized by keeping people apart as much as possible. Rational closing measures should be adopted when epidemic diseases prevail.

Dr. J. O. Cobb, United States Public Health Service, Chicago: Dr. Hayne is right, as there must be rules and regulations for the health officer in the sparsely settled municipalities and communities; but cities like New York, Chicago and Detroit must have some other methods of dealing with the public during a terrible scourge like influenza. The problem must be looked at purely from what one can do and not what might be ideal. One can do in Chicago what he could not do in South Carolina. The prevention of the spread of influenza can be controlled by a properly made and worn mask. The schools should be kept open in all large cities and business allowed to go on as usual.

Dr. Thomas E. Maloney, Fall River, Mass.: Does closing close? Do masks mask? I am prompted to ask this question after the important statement made by Colonel Vaughan that influenza is a hand to mouth disease. So far as I have observed, in many of the rural communities in New England the incidence of the disease is much greater in rural than in industrial communities.

Dr. W. E. Moore, Sioux Falls, S. D.: When the epidemic started in my city we closed up everything for seven weeks, and when we opened wide we had an explosion of the disease, and now we are having more cases than ever. I advise the use of masks for nurses and others who are brought into intimate contact with patients suffering from influenza. An important question is, How long will the disease last? Schools and theaters and other places could not be closed forever.

Dr. J. L. Folkston, S. D.: I agree with Dr. Inches. After the influenza began we secured a supply of the Rosenow vaccine from the Mayo Foundation, and with the free use of this vaccine we have lost only one patient. In regard to the mask, I have told my people not to wear them. I believe that masks are just as filthy a thing as a big, long mustache.

Dr. H. Delamater, St. Joseph, Mo.: The first case of influenza in St. Joseph came from the Great Lakes, September 15. We realized that influenza is a contact disease. We isolated our cases from the start. We do not advocate the use of masks. The mask has been abused and damned by many members. If the mask is condemned for influenza, then why not condemn it in cases of diphtheria, scarlet fever, etc.?

Col. H. S. Cumming, Newport News, Va.: I believe in the value of the mask. It acts as a barrier between the hand and mouth rather than between the mouth and the outside air. Influenza as a crowding disease is a misnomer. When individuals have gathered together in large crowds for the purpose of commercial exchange or theater parties, the incidence of the disease has not markedly increased; but when people have gathered together in large crowds for the purpose of eating, there has generally been an explosive outbreak.

Dr. Frederick Montizambert, Montreal: I believe in the use of the masks for nurses and others who come in contact with the sick. After the mask has been used for a certain time, the circle opposite the mouth becomes moist; and moist surfaces will not receive droplet infection. The droplets will not dry off, and consequently they are sucked into the moist surfaces and protection is not afforded. A dry mask will stop droplet infection. Masks should be frequently changed. Another point in connection with the wearing of the mask is the possibility of infection from the conjunctiva. It is not sufficient to protect the nostrils and mouth, and nurses and others who are stooping over in influenza cases are exposed to droplet infection and should wear masks with transparent eye pieces.

Dr. Milbank Johnson, Los Angeles: I should like to speak of frequent hand shaking in America as a possible factor in conveying the disease. Americans can profit by the custom of the Chinese to shake their own hands as a greeting rather than those of others. If influenza is a contact disease, it makes no difference what kind of a micro-organism is causing the trouble. Doubtless the shaking of hands is a factor in causing its spread and a method of conveying respiratory diseases. I would urge the members to follow the Chinese custom and see if there is anything in it; it does not cost anything.

Treatment of Influenzal Pneumonia with Plasma of Convalescent Patients

Lieut. Frank W. Hartmann, U. S. Navy: To be published in The Journal.

DISCUSSION

Dr. S. R. Pietrowicz, Chicago: My experience has been limited to several hundred cases seen at the Cook County and St. Mary's hospitals, but I believe there is an era of awakening regarding this form of treatment for respiratory diseases. Many physicians still suffer with airophobia and keep their patients in hot rooms, but at the Cook County Hospital the first thing done was to place the patients in rooms with open windows, keeping them well covered, and we found that fresh air is the cornerstone of therapy. Even patients who were cyanotic were greatly benefited almost immediately by this treatment. This has convinced us that fresh air has certain specific properties. First, it is a tonic, then a sedative, a stimulant, and finally an antipyretic. I am sure that its chemical value, its physical value, its respiratory and cutaneous value cannot be overestimated, and this method of treatment should be used more extensively. The contraindications for this treatment are very few—old age, extreme youth, and patients with profuse hemoptysis.

Dr. A. A. Goldsmith, Chicago: I have been under the impression that every man has a different treatment for influenza and pneumonia, and yet has obtained practically the same results, except perhaps at the Great Lakes and other cantonments where the mortality was very high. I thought that certain of the cases were doomed from the start and no treatment, unless perhaps the serum, is of any value. I believe in the fresh air treatment and quiet conditions and think that aside from these one has very little power over the course of the disease. Often patients are continuously stimulated and go on to a fatal termination when, if they had been left alone, many would have recovered. During the last ten years I have tried to leave my patients alone, allowing them to rest as much as possible, giving codein for the cough, if it was necessary, and occasionally morphin, but not bothering about the stimulation. If the toxemia can be combated, that is all that is necessary; and if patients are kept quiet and allowed to sleep, the mortality will be lowered.

Dr. H. N. Bundeson, Chicago: The serum treatment of pneumonia and influenza I believe is of great value, just as like procedures have given similar results in scarlet fever and diphtheria. From the reports of various workers it appears to be almost a specific. The doses should be large, 200 c.c. of convalescent serum given very slowly over half or three quarters of an hour. If there is not a quick drop in the temperature within a short time, another 200 c.c. should be injected. I believe one cause of failure in this treatment is that patients coming from one part of the country are injected with serum from a man from another part of the country, and the serum is probably of a different type. The best results can be obtained from the same type of serum in the same hospital. I believe the serum treatment is efficient only when given early, which is true also of the antidiphtheritic serum.

Lieut. L. R. Melnikoff, Great Lakes Naval Training Station, Ill.: The conclusion at the base hospital at the Great Lakes is that the so-called wonderful cures that have been reported outside of the Army and Navy camps have not been cures of influenzal pneumonia, but of straight influenza or acute cold. On the postmortem table there was no normal tissue left in the lungs in the cases of influenzal pneumonia. The serum treatment has been tried early in the epidemic with very little success, but it is not the same method as that used by Dr. Hartmann. Venesection cannot be successfully done because the circulation in our cases was practically nil and the blood clotted too rapidly. Pneumonia patients did better in the hospital units than those in tents, and most cases were treated in that way. Calomel and salts were given, and in the early cases, some acetylsalicylic acid; but this was soon discontinued, as it was found to be a depressant. If the pulse was over 100, we gave 15 minims of digitalis every three hours. Codein was given in very small doses for the cough and fluid was given frequently, but very little catharsis was employed. Whisky should very seldom be given except as nourishment. Of 3,000 cases at the base hospital, from 20 to 30 per cent. developed pneumonia, and of these about 20 per cent. resulted fatally.

Dr. A. C. Tenney, Chicago: I wish to mention a modification of the vaccine treatment as a preventive measure, thinking that the members may be interested in the results of several years' experimentation and observation, checked by laboratory tests. The idea is simply to furnish an excess of nucleinic acid in the region where the vaccine is introduced. The tissues must be thoroughly massaged after the hypodermics are given. The vaccine selected is introduced in the usual manner, and centrally from that point a dose of nucleinic acid is introduced. I recommend this procedure to those who wish to prevent pneumonia and influenza or a mixed infection from which so many people are suffering. Veratrum viride is not a new remedy. Four years ago it was shown to increase the opsonic index, and this drug in connection with hexamethylenamin has been my mainstay in the treatment of the present epidemic.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Orthopedic Surgery, Boston

September, 1918, **16**, No. 9

1 Cystic and Fibrocystic Disease of Long Bones. Report of Cases. H. W. Meyerding.—p. 253. (To be continued.)
2 *Practicability of Equalizing Unequal Legs by Operation. F. J. Fassett.—p. 277.
3 Organization of Division of Orthopedic Surgery in U. S. Army with Expeditionary Force. J. E. Goldthwait.—p. 288.
4 *Treatment of Club Foot in Infancy. E. L. Scott.—p. 290.
5 *Rational Treatment of Bone and Joint Tuberculosis. S. A. Twinch.—p. 295.
6 Case of Congenital Deformities of Arms and Legs. C. A. Parker.—p. 302.

2. Equalizing Unequal Legs.—Seven cases are cited by Fassett in which unequal legs were equalized by operative shortening or lengthening. In several instances, three-quarters of an inch was added to the length of a femur, but at a cost of time and hardship too great in comparison with the gain. The bone was divided in a Z-shaped manner—as is done in tendon lengthening. The reason that no more than three quarters of an inch could be gained was not the danger to vessels and nerves, but the fact that these structures are all too well protected by the great strength of the fibrous tissue of the leg. Fassett is of the opinion that if the problem were to be further studied along this line it would seem that the hope of greater gain would lie, not in the application of greater force, but in the clean division of more tendons, fascial bands, or intermuscular planes. Two inches and a quarter and, probably, three inches may be subtracted from the length of a femur without serious loss of muscle tone. This procedure was employed in three cases. If the subtraction method is chosen, the simpler the technic the better. Much was hoped by Fassett from a pattern of osteotomy in which the bone was split first by two longitudinal saw clefts in planes at right angles to each other, and transverse cuts made at two different levels so that four interlocking "fingers" were formed. In the model and in the cadaver, this allows a telescoping movement of the fragments which seems compatible with great firmness. But in the elastic bones of children and young adults Fassett found that this device is not worth the time required to use it in the operation. The operation of choice would appear to be the removal of a simple cylinder of bone of proper length and the fixation of the approximated fragments by a bone splint or Lane plate.

4. Treatment of Club Foot in Infancy.—Assuming an infant with a positive degree of talipes equino varus, the procedure as suggested by Scott would be as follows: At ten days, even much later in most cases, without an anesthetic, the foot is gently manipulated against the resisting structures. Moderate force is used. With the thigh flexed on the abdomen and the leg flexed on the thigh, a tight adhesive plaster strapping is done to the foot, going in the usual way. Shingle straps are applied over the long piece of plaster to insure adhesion. This should correct, to some extent, the inward torsion. The foot is left in this position for about an hour. Then a plaster-of-Paris cast is made of the foot and leg. In the prehardening stage, the thigh is again flexed on the abdomen and the leg on the thigh, the foot is firmly grasped and a forced position, giving as much correction as possible, is taken and held until the plaster is fairly rigid. As soon as expedient, the plaster cast is removed. The original adhesive strapping is removed from the foot, new straps are applied, and the child dismissed for a day.

The plaster model is now corrected by sawing and fitting to conform to the cast of a normal foot. Having corrected the principal elements, equinus and varus, and having overcome the outward bowing of the tibia, the model is shaved off under the outer metatarsals, sandpapered, covered with stockinette, and a cast, of desired thickness, is applied very tightly. By heating and drying, a very strong, light cast is obtained. This is applied to the child's foot and held in place by three straps of adhesive plaster, one at the top, one around the ankle joint, and one across the heads of the metatarsals. These casts can be renewed each ten days. No pressure points or excessive constriction being allowed, the child wears the cast with comfort after a few hours. By measurements of the foot, taken by direction, changes can be made in the model for each cast.

5. **Tuberculin Treatment of Bone and Joint Tuberculosis.**—Twinch records his experiences with the tuberculin treatment of bone and joint tuberculosis. Under modern tuberculin treatment his recoveries have averaged 68 as against 34 per cent. when treated without tuberculin. In addition, the period of treatment of recovered cases averaged only eleven and a half months, while the average time of treatment of recovered cases without tuberculin was five and one-fourth years. Twinch ascribes his good results to the fact that tuberculin acts favorably on the primary focus of infection in these cases. Tuberculin checks the local process, the individual also regaining and maintaining strength not attained by treatment alone on general hygienic and orthopedic lines.

Annals of Surgery, Philadelphia

October, 1918, **68**, No. 4

7 *Radium Treatment of Tumors of Superior Maxilla. H. H. Janeway.—p. 353.
8 Surgical Treatment of Trifacial Neuralgia. W. Sharpe.—p. 371.
9 *Surgical Treatment of Certain Diseases by Splenectomy. J. Sherren.—p. 379.
10 Surgical Aspects of Right Subphrenic Abscess. J. Burke.—p. 383.
11 Case of Hypernephroma of Falciform Ligament of Liver. A. H. Harrigan.—p. 395.
12 Low Lateral Incision and a Method of Nerve Block for Appendectomy. L. F. Watson.—p. 397.
13 Surgical Pathology of Human Prostate. O. S. Lowsley.—p. 399.
14 Human Seminal Vesicles at Birth. Their Fetal Development. E. M. Watson.—p. 416.
15 Transverse Ectopy of the Testis with Masculine Uterus, Report of Case. T. Kimura.—p. 420.
16 Case of Giant-Cell Growth of Bone and Tendon Sheath. L. W. Ely.—p. 426.
17 Intestinal Obstruction Produced by Evagination of Ileum Into Urinary Bladder. W. H. Barber.—p. 429.
18 Surgical Closure of Wounds. G. Dehelly.—p. 430.
19 Physical Factors Influencing Infection. W. Martin.—p. 436.

7. **Tumors of Superior Maxilla.**—Fifty-five cases of tumor of the superior maxilla, treated by radium, assisted when necessary by a conservation operation, are analyzed by Janeway. These tumors included eight benign tumors and forty-seven malignant growths, of which four were sarcomas and forty-three epitheliomas. Of the forty-three patients with carcinoma of the superior maxilla a complete retrogression to date has been obtained in eight. Only one of these eight patients has not been traced. Two are within a few months of the three-year period. The other five have passed a little over one year since their treatment was administered. Janeway emphasizes the fact that a percentage of clinical cures to date of 16.2 per cent. in a series containing many advanced and inoperable cases promises a more favorable result by the method used than can be obtained by operation alone.

9. **Surgical Treatment of Diseases by Splenectomy.**—Fourteen splenectomies for disease were performed by Sherren with one death—a boy of 14 on whom the operation was performed for advanced cirrhosis of the liver. The remaining cases were distributed as follows: splenic anemia and Banti's disease, nine; Gaucher's splenomegaly, one; hydatid cyst of spleen, one; splenomegalic jaundice, two.

Bulletin of Johns Hopkins Hospital, Baltimore

November, 1918, **29**, No. 333

20 Development of Human Verumontanum. E. M. Watson.—p. 241.
21 *Electromyographic Studies of Clonus. S. Cobb.—p. 247.
22 Lavoisier and History of Physiology of Respiration and Metabolism. Contemporary Views of Life Processes. J. C. Hemmeter.—p. 254.

21. **Electromyographic Studies of Clonus.**—A few cases were studied intensively by Cobb by means of the string galvanometer and the results seem to show that clonus gives a typical electromyogram, the details of which, perhaps, throw light on the nature of clonus. Beginning slowly, the periods between contractions soon shorten to a constant length, and this periodicity then varies not at all with fatigue, and only slightly with change of muscular tension. Clonus was kept up for half an hour in one case. In different individuals the average length of these periods varies only by a few hundredths of a second, the shortest being 0.12 second and the longest 0.17 second. The apparatus used for recording the action currents of the muscles studied was the string galvanometer designed by Dr. H. B. Williams. This is a standard machine such as is used in "heart stations" for electrocardiographic work. The optical system and recording camera were also the stock type, except that a special gear was introduced to give greater speed to the film; with this addition a speed of from 20 to 27 cm. per second was obtainable. Five patients were intensively studied; two of these had patellar clonus alone, two had ankle clonus alone, and one had both patellar and ankle clonus.

Florida Medical Association Journal, Jacksonville

October, 1918, 5, No. 4

23 Treatment of Gonorrhea in Male. J. H. Coffee.—p. 60.

Georgia Medical Association Journal, Atlanta

October, 1918, 8, No. 6

24 Goiter, Results in Seventy Operated Cases. W. S. Goldsmith.—p. 111.
25 Roentgen Diagnosis in Empyema Simulating Other Diseases. W. A. Cole.—p. 114.
26 *New Incision for Surgery of Gall-Bladder and Ducts. C. Usher.—p. 118.
27 Treatment of Lobar Pneumonia. J. W. Palmer.—p. 118.
28 Veratrum Treatment of Pneumonia. S. T. R. Revill.—p. 121.

26. **New Incision for Surgery of Gallbladder and Ducts.**—The incision Usher advocates is the Judd modification of Bevan's incision, except that the peritoneum is cut at an angle of about 45 degrees, or along near the borders of the ribs. The advantages are said to be that the peritoneum is strong in this locality, in fact almost a muscle. Sutures do not tear out readily, as sometimes is the case when the peritoneum is cut straight up and down; there is little likelihood of cutting the diaphragm, an accident that might happen when the peritoneum is cut straight up and down.

Journal of Immunology, Baltimore

September, 1918, 3, No. 5

29 *Complement Fixation Reaction in Tuberculosis. M. A. Wilson.—p. 345.
30 *Id. H. von Wedel.—p. 351.
31 Rôle of Immunity in Conduct of Present War. J. A. Kolmer.—p. 371.
32 Mode of Action in Vitro and Preparation of Hemolytic Antibodies. A. K. Balls and J. H. Korns.—p. 375.
33 *Bleeding Guinea-Pigs and Preserving Sheep's Erythrocytes. J. J. Wenner.—p. 389.
34 *Studies in Pneumonia. Skin Reaction to Pneumotoxin. C. Weiss and J. A. Kolmer.—p. 395.
35 *Method of Preparing Bacterial Antigens. J. C. Small.—p. 413.
36 Saponin Hemolysis. T. Furuhata.—p. 423.

29. **Complement Fixation Reaction in Tuberculosis.**—Wilson describes a technic which she believes has increased the efficiency of this test. It has to do with the standardization of the guinea-pig's serum to determine the value of the complement. Not all guinea-pigs' serums are efficient for tuberculosis complement fixation. Therefore, the serum from each guinea-pig should be tested for fixability with tuberculosis antigen plus tuberculosis serum before pooling the complement for diagnostic tests. The method of standardizing the complement, the preparation of our tuberculosis antigen, and the diagnostic test, are described in detail.

30. **Complement Fixation Reaction in Tuberculosis.**—Wedel made 1,078 complement fixation tests on 200 specimens of blood serum taken from persons with no clinical history of tuberculosis, and from persons with active, inactive and primary pulmonary tuberculosis. The technic employed was similar to that originally used by Wassermann with slight modifications. The complement fixation results on serums from positive cases made the first day after taking the specimens were negative or weakly positive in a very large percentage of cases; while in most instances, seven days later these same serums gave a strongly positive reaction and continued to give this strongly positive reaction week

after week with unvarying regularity. None of the nontuberculous serums gave a positive reaction the second, third, or fourth week after the specimen had been obtained from the patient. Of all positive serums in the series, only twelve gave a 3 or 4 plus reaction the first day tested. After being preserved in the ice-box under sterile precautions for seven days, forty-nine serums gave 3 or 4 plus reactions. Of eighty-two serums from tuberculous cases of all types that gave negative or doubtful reactions the first day, the results on the seventh day were positive in thirty-seven. The reactions apparently did not change after the sixth day.

Wedel's experiments confirm those reported by Wilson (see Abstract 29) but are in disagreement with all of Corper's conclusions. First, because in Wedel's series of cases there were twenty-six specimens from patients that gave positive Wassermann reactions but offered no physical symptoms of tuberculosis. None of these gave any cross fixation with the Wilson tuberculosis antigen. Second, in no instance did Wedel obtain a positive reaction using double the regular amount of sterile patient's serum in his entire series of known nontuberculous cases. Third, he never found the Wilson antigen to be anticomplementary in four times the dose used in the test, if the antigen is heated at 55 C. for one half-hour just before being used. Fourth, his tests in the active tuberculous cases gave 98 per cent. of positive reactions. Fifth, the very slight turbidity produced by the antigen in no way interferes with the reading of the results. Wedel insists that pooled complement from at least six guinea-pigs should be used in making the tests, or the complement from single pigs should be tested for its complement fixation value with known positive serums. Double the original Wassermann amount of patients' serum should be used. No report should be made until the serum has been tested after having been kept under sterile conditions in the ice chest for from four to six days, preferably six days. Wedel's results seem to indicate that with these modifications of the original complement fixation tests, 100 per cent. of nontuberculous cases will give absolutely negative results; nearly 100 per cent. of the primary and active cases will give positive results, with the exception of the dying persons; and about 25 per cent. of the partially inactive and inactive cases will give only weak positive results.

33. **Preservation of Sheep Corpuscles.**—For the preservation of sheep's erythrocytes, Wenner collects the blood in a sterile bottle containing shot or glass beads, and at once defibrinates it. It is then filtered through sterile cotton into another sterile bottle and the quantity of fibrin-free blood is estimated. This estimation is made readily in a previously graduated bottle; it is often more convenient to determine the quantity by measuring an equal amount of water placed in a similar bottle. One part of 40 per cent. aqueous solution of formaldehyd is added to 800 parts of blood. This formaldehyd-treated blood is kept in the ice box as a stock supply. Whenever erythrocytes are needed, the necessary amount of blood is removed and centrifuged, and the corpuscles washed three times with 0.85 per cent. saline solution.

34. **Skin Reaction to Pneumotoxin.**—The work reported by Weiss and Kolmer is a part of the studies on the properties of pneumotoxin and its probable rôle in the pathology of lobar pneumonia. Guinea-pigs previously sensitized with sublethal doses of pneumotoxin or with the serum or lung exudate of dogs suffering from experimental lobar pneumonia, reacted to the intracutaneous injection of 0.1 c.c. of the toxin by a local erythema and hemorrhagic edema in the subcutaneous tissue overlying the muscle. The skin reaction to heat-killed pneumococci was negative in most of these animals, and when positive, was of a suppurative type, marked by less edema and more leukocytosis. Control animals gave uniformly negative results. Among human adult cases of lobar pneumonia the reaction (which was characteristically that of a local edema and erythema) was elicited as early as the fifth and as late as the thirteenth day of the disease (two days before and six days after the crisis, respectively). In children it was demonstrable about the same time, but was negative immediately or one or two days after the crisis. Patients recovering by lysis reacted as late as the thirty-second day. In general, the test was positive in all active cases, that is, throughout the toxemia. Cases earlier than the fifth day of the disease were not available. Control patients, suffering with bronchopneumonia or with acute or chronic infections not of pneumococcic origin, as well as healthy adults and children did not react. The reaction is regarded by the authors as indicative of a state of allergy to pneumotoxin.

35. **Preparing Bacterial Antigens.**—A chloroform-ether extraction was used by Small to remove the fat-like substances from dried bacteria. After thorough extraction the residue was freed from traces of these solvents and suspended in sterile salt solution. The principles concerned in complement deviation are left behind in this extraction, and the extract contains substances that interfere with the complement-deviation reaction, hence this separation is, in itself, highly desirable. A further advantage is that the chloroform-ether extraction uniformly affects all cells by removing water-insoluble substances and so breaks up the integrity of the individual as to facilitate subsequent aqueous extraction. Complete extraction of the water-soluble fraction cannot be assured since the cellulose fraction left unchanged in the bacterial cell may be so distributed as to impair aqueous extraction. The use of the whole suspensions of this chloroform-ether extracted bacterial residue appears to supply any incompletely extracted bacterial particles to the complement deviation reaction, so that incomplete extraction does not entail a dead loss of the complement deviating substances. To obviate bacterial contamination, which seems to be in some way responsible for a sudden anticomplementary change, the bacterial residue was dried after the last washing with ether, and intimately mixed with eight and one-half times its weight of sodium chlorid. This bacteria-salt mixture was reduced in a mortar to a very fine powder. For use this powder is suspended in distilled water, 0.95 gram per 100 c.c. of water making the right proportions. This is shaken until, on solution of the salt, an evenly distributed, slightly opalescent suspension of the bacteria is effected. Prepared in this manner it yields a 0.1 per cent. suspension of bacteria in normal salt.

Journal of Parasitology, Urbana

September, 1918, **5**, No. 1

37 Iguana Tick, Amblyomma Dissimile, in Panama. L. H. Dunn.—p. 1.
38 Study of Parasitic Protozoa. R. Kudo.—p. 11.
39 Acanthocephala of Subfamily Rhadinorhynchinae from American Fish. H. J. Van Cleave.—p. 17.
40 Two Species of Nematodes [Gongylonema Ingluvicola Ransom, 1904, and Capillaria Strumosa (Reibisch, 1893)] Parasitic in Crop of Chickens. L. D. Wharton.—p. 25.
41 Two New Nematodes Common in Some Fishes of Cayuga Lake. M. Wigdor.—p. 29.
42 Development of Gregarines and Their Relation to Host Tissues: (II) in Cephaloidophora Delphinia (Watson) M. W. Kamm.—p. 35.
43 Life Cycle of Fowl Cestode, Davainea Cesticillus (Molin). J. E. Ackert.—p. 41.

New York State Journal of Medicine, New York

November, 1918, **18**, No. 11

44 Differential Diagnosis Between Chronic Gastric Ulcer and Carcinoma of Stomach. S. Basch.—p. 427.
45 *Incidence of Peptic Ulcer and Carcinoma in Duodenum. J. A. Lichty.—p. 433.
46 *Surgery vs. Radium in Treatment of Carcinoma of Bladder. B. S. Barringer.—p. 436.
47 War A School of Surgery. S. Smith.—p. 430.
48 Epidemic of Typhus in Roumania. R. H. Rulison.—p. 443.
49 Problem of Venereal Disease Control. A. N. Thomson.—p. 451.
50 Recent Factors in Control of Venereal Diseases in State of New York. M. Nicoll, Jr.—p. 455.

45. **Peptic Ulcer and Carcinoma in Duodenum.**—Analysis of a series of 486 patients with duodenal lesions showed that six were cancerous and 480 were benign ulcers, a ratio of one to eighty. In a series of 780 patients with gastric lesions 240 were found to be cancerous and 540 were benign, a ratio of one to two and a fourth. In reviewing his own cases, Lichty found but six cases of carcinoma of the duodenum, and about 240 cases of carcinoma of the stomach, a ratio of one to forty. These diagnoses of gastric carcinoma

were largely verified by necropsy or operation. When neither necropsy nor operation was done, the diagnosis was confirmed by the inevitable course of all cancer cases. Reviewing over 1,000 cases of peptic ulcer, collected during the same period in which the cancer cases were collected, Lichty found a diagnosis of ulcer of the duodenum had been made 480 times, whereas ulcer of the stomach was diagnosed 540 times.

Another interesting observation of this study was the location of the carcinoma in the duodenum. Most reports seem to be of growths which come directly from the pyloric ring or immediately from or about the papilla of Vater. This fact is confirmed very strikingly in the six cases of cancer of the duodenum which Lichty reports. None were found in that area which is most frequently the seat of peptic ulcer. Lichty wonders, if carcinoma of the stomach arises so frequently (50 to 70 per cent., according to some) from a peptic ulcer, why does not carcinoma occur more frequently in the doudenum where peptic ulcer abounds? He throws out the suggestion that the etiologic and determining factor of carcinoma of the stomach may be something entirely independent of peptic ulcer.

46. **Surgery vs. Radium in Cancer of Bladder.**—Barringer maintains that if surgery could cure fifteen cases in 100, radium could cure twenty cases. He reports seven cases, in five of which a cure was effected with radium.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Nov. 9, 1918, **2**, No. 3019

1 Influenza Epidemic in British Armies in France, 1918. Committee of Advisory Board to D. G. M. S., France.—p. 505.
2 *"Spacing Out" in Prevention of Military Epidemics of Cerebro-Spinal Fever. J. A. Glover.—p. 509.
3 *Case of Subacute Infective Endocarditis. B. Hudson.—p. 512.
4 *Case of Intestinal Obstruction. J. M. W. Morison and L. White. —p. 513.
5 Pyloric Stenosis with Accompanying Spasmodic Dysphagia. E. B. Barton and H. H. C. Dent.—p. 514.
6 Inequality of Pupils. T. S. Barrie.—p. 514.

Nov. 16, 1918, **2**, No. 3020

7 *Investigations on One Thousand Consecutive Cases of Peripheral Nerve Injury. J. Le F. Burrow and H. S. Carter.—p. 535.
8 Past and Future of Crusade Against Tuberculosis. M. Morris. —p. 539.
9 Treatment of Ante-Natal and Post-Natal Syphilis. J. Adams. —p. 541.
10 *Method of Overcoming the Adherence of Tendons After Suturing. P. C. C. Fenwick.—p. 542.

2. **"Spacing Out" as Influenza Preventive Measure.**—Glover urges that when a unit shows a high carrier rate, a distance of at least 2½ feet between the beds should be enforced. This is the "spacing out" referred to in the title.

3. **Subacute Infective Endocarditis.**—The remarkable features about Hudson's case were the insidious and slow progress (eight weeks), the absence of any definite cardiac symptoms, and the fact that the heart never became enlarged, in spite of the severity of the aortic lesion and the long duration of the case. This is attributed to the fact that the large vegetation prevented any real leaking of this valve. The patient was never really "cardiac"; there was no dyspnea or edema, and the pulse maintained a steady, regular, slow beat till the end. He was in a "typhoid" state throughout the disease, and died eventually of a slow toxemia.

4. **Intestinal Obstruction.**—The case reported by Morison and White was an instance of intestinal obstruction due to the healing process of old tuberculous ulcers of the bowel, possibly secondary to a lung infection. Forty years elapsed between the primary attack, and the period during which the patient showed symptoms and was extremely ill.

7. **Peripheral Nerve Injury.**—Burrow and Carter describe in detail their method of examination of nerve injury cases. Their observations after nerve repair point to the following general facts: Trophic and vasomotor functions recover first. Trophic ulcers may heal surprisingly quickly after repair of peripheral nerves. Deep sensibility recovers next, and usually in the order of sense of pressure, perception of movement in joints, etc., and then roughness and pressure pain. Accurate gaging of position and range of movements are slower in their reappearance. Localization of tactile pressure recovers earlier. Radiating, ill-localized sensations, referred to wide areas and usually associated with tingling, appear next; they have a high threshold value, and conform largely to the "protopathic sensation" of Head and Rivers. Next in order come accurate perception of light touch with a gradual disappearance of radiating sensations and a gradual lowering of the threshold value of the stimulus required to obtain responses from the patient. Last of all, and very imperfectly as so far observed, appear the discriminating sensations—that is, stereognostic sense, etc., and lowering of threshold value to those of normal skin. Voluntary movement appears in the highest members of a group of muscles first, and gradually extends downward, as a rule. Motion usually follows the return of "protopathic" sensation. It is present long before the radiating ill-localized sensations are abolished.

10. **Overcoming Adherence of Tendons After Suturing.**—Fenwick cites a case in which he wound thick catgut around each reunited tendon to prevent adherence to the scar and surrounding tissues. The result was excellent.

Edinburgh Medical Journal

November, 1918, **21**, No. 5

11 Habitual Constipation. J. Ritchie.—p. 253.
12 *Treatment of Splenomegaly with Anemia in Syphilitics. J. Eason. —p. 258.
13 Teaching Obstetrics to Under Graduates. J. H. Croom.—p. 268.
14 Id. A. H. F. Barbour.—p. 274.
15 Id. F. W. N. Haultain.—p. 280
16 Reasons for Present Defective Education in Obstetrics, with Suggested Remedies E. H. Tweedy.—p. 283.
17 Teaching Obstetrics and Gynecology. J. S. Fairbairn.—p. 286.
18 Id. V. Bonney.—p. 290.
19 Id. N. T. Brewis.—p. 291.
20 Id. J. H. Ferguson.—p. 294.

12. **Treatment of Splenomegaly.**—A case of splenic anemia is recorded by Eason in which the Wassermann test was positive and antisyphilitic treatment produced definite improvement. The Wassermann test remained positive. The results obtained from specific and surgical treatment are compared by reference to seven collected cases. The late result in one operation case is also noted. The rationale of the surgical treatment is briefly considered. With regard to the management of such cases of syphilitic origin simulating Banti's complex, Eason believes that in the first instance all cases should have very thorough antisyphilitic treatment. No great harm and much improvement may result from this when carried out with care while watching the effect of each injection on the blood. If this has been done, and the Wassermann test still remains positive, operation then becomes almost as necessary as for cases of the orthodox Banti type. The need for operation would not be quite so urgent if from time to time renewed specific treatment were known to rearrest activity. As this prospect is meantime based solely on hypothesis, the indication for operation is practically the same as in Banti's disease, if specific treatment has already failed.

Lancet, London

Nov. 16, 1918, **2**, No. 20

21 Principles of Neurology. H. Head.—p. 657.
22 *War Nephritis. Clinical Study of Early Cases. H. B. Day.—p. 660.
23 Nephritis in Relation to Recent Epidemic of Influenza. C. P. Symonds.—p. 664.
24 *Tuberculous Disease of Hip-Joint. Sign of Pathological Activity. H. J. Gauvain.—p. 666.
25 *Treatment for Septic Sores and Nile Boils. H. W. Crowe.—p. 667.

22. **War Nephritis.**—The result of Day's inquiry in fifty cases confirms Abercrombie's statement, founded on 500 cases, that the onset of war nephritis was almost invariably attended or preceded by fever. The first symptoms of actual nephritis are an increasing breathlessness and the appearance of edema, generally with more or less cough, headache and pains in the back and legs. Urinary symptoms are only complained of in the special lower tract type. It is impossible to judge of

the severity and outcome of the disease from the nature of the early symptoms. The first sign of approaching recovery is the spontaneous appearance of a diuresis which quickly reduces the edema. This event may occur within a week of the onset in mild cases or be deferred for a month or longer in other patients, while severe cases may reach a tardy convalescence without sudden polyuria. If percussion is employed as well as palpation a definite increase in the size of the spleen can be made out in most cases of trench fever, although it is impossible to feel the organ when it was only moderately enlarged. The use of this combined method, when daily examinations are made, gives most interesting results in trench fever. In all cases where a previous enlargement was excluded the spleen showed alternate advances and recessions at regular intervals of five or six days (rarely four and a half days). This phenomenon occurred in every form of the disease, whether the fever was relapsing or continuous, and in cases where no definite febrile relapse followed the initial bout a second descent of the spleen was evident at the usual interval. The signs of periodicity of this disease evidently are closely related to the accompanying changes in the spleen.

As to complications, bronchitis is very common in the early stages, particularly in patients with considerable edema, or who are suffering from a winter cough—so common in the trenches. As a rule it disappears with the subsidence of edema, but may develop into a septic process with purulent sputum and slight fever. It has been suggested that the relapses seen in war nephritis are due to complications in most cases. Day's experience does not support this view. Other complications, such as uremia, retinitis, cerebral hemorrhages, etc., may occur as in other forms of nephritis. Day believes that the seasonal incidence of war nephritis points to cold and exposure as predisposing agents.

24. **Active Tuberculous Disease of Hip-Joint.**—The most constant and most marked evidence of activity of this disease Gauvain says is spasm of the muscles about the affected joint. As the disease becomes less acute spasm becomes increasingly difficult to demonstrate, until eventually it completely disappears. It may last be elicited in the following manner: If the femur, on the affected side, be grasped firmly in the region of the condyles, the head of the bone may be rotated gently within the acetabulum, either inward or outward, through a varying but often considerable angle. When the disease is active, a further slight sharp rotation is instantly followed by spasmodic muscular contraction, not confined to muscles about the joint but extending to the abdomen and visible in the abdominal muscles, or still more easily demonstrated if the palm of the hand is placed on the abdomen between the iliac spines. Quite a gentle and painless but sharp rotary movement is sufficient to provoke this reflex spasm of the abdominal muscles. In those cases where doubt exists as to the activity of the disease, Gauvain has found it to be a sign of the utmost value. Confirmatory evidence of activity, as indicated by muscular spasm, may at the same time be demonstrated in the following manner: In a child, a finger and thumb of the hand not engaged in grasping the femoral condyles may be applied simultaneously to the two anterior superior iliac spines. During the first rotation of the femur on the affected side no movement is conveyed to the iliac spines. When, however, rotation has been checked and is sharply but gently continued, exaggerated movement in the same direction is transmitted to the iliac spines. With a healthy joint this type of movement is not apparent, with a hip-joint affected with declining but still active tuberculous disease it is very striking, even when the disease otherwise appears to be quiescent.

25. **Septic Sores and Nile Boils.**—A vaccine prepared from a large number of strains of streptococci isolated from septic sores, combined with a similar series of a peculiar staphylococcus isolated from Nile boils, when given in frequent small doses, in conjunction with surgical measures of which the most important is the early incision of boils, Crowe claims to be of great assistance in the cure of these diseases. Increasing the dose of vaccine after cure is complete prevents relapse.

Bulletin de l'Académie de Médecine, Paris

Oct. 29, 1918, **80**, No. 43

26 *The Germans at Lille. A. Calmette.—p. 382.
27 Colloidal Arsenic and Silver in Influenza. M. Capitan.—p. 388.
28 *Artificial Pneumothorax for Gangrene of Lung. P. E. Weill.—p. 393.
29 *Gas Gangrene in 1918. Sieur and R. Mercier.—p. 394.

26. **German Inhumanity at Lille.**—This protest was mentioned in the Paris Letter, page 1929. It is signed by four members of scientific organizations besides Calmette, and specifies a few of the *actes de barbarie* which they witnessed during the occupation of Lille by the enemy. "To list them all," they say, "would fill a volume." The sixty-fourth regimen of Pomeranian infantry, in charge of General Zöllner, during one week last spring selected and deported 10,000 girls and young women from private homes. Almost all the boys from 14 to 18 and the men of 60 to 65 were sent to build dugouts and roads at the front, carry munitions, etc., and the health of many of them has been wrecked, while many died. Leading men and women, to a total of 1,000, were carried off as hostages, Jan. 6 to 12, 1918, the men to Poland, the women to an internment camp in Brunswick. Among the twenty-five who died the first week was Professor Buisine, chief of the chemistry institute. He had heart disease, but the medical major (Dr. Krug) refused to exempt him, saying, "That is not contagious for the German army."

The protest continues: "The high command in Germany willed the war, but the people in arms approved it, and resolutely waged war with the most ferociously cruel means, even the physicians with the army doing the most odious acts without a word of excuse, regret or pity."

28. **Pneumothorax in Treatment of Gangrene of the Lung.**—Weill has found the outcome infinitely better with a gangrenous process in the lung when air is allowed to enter the chest. This causes the lung to retract, and the contents of the gangrenous focus are expelled in a vomica, after which recovery rapidly proceeds. The pneumothorax should be applied under screen control, and be completed and renewed a few days later. In a few cases he injected nitrogen, but usually air sufficed. It is extremely important to detect and thus treat a gangrenous focus of the kind before it has progressed to invade adjoining tissues, as the pneumothorax is impotent against this eventuality.

29. **Gas Gangrene.**—Sieur and Mercier report that the improved methods of rapid evacuation of the wounded and early surgical intervention have brought the cases of gas gangrene down to 0.29 per cent. of the wounded at the advanced posts; 0.19 per cent. in the intermediate zone, and 0.30 per cent. in the interior. Gas gangrene developed in the hospitals of the interior only in 0.068 per cent. of the men who had been operated on before. Aside from the wounded lying too long on the field untended and those with shock too severe to permit operation, it seems that gas gangrene can be avoided, even without specific serotherapy. Among the improvements realized is the recognition that crushing of muscle tissues invites gas gangrene, as also ligation of too many arteries. Surgeons now do not shrink from long incisions and extensive resection of lacerated tissues in such cases. Antigangrene serotherapy has already given encouraging results, and it offers legitimate hopes for prophylaxis.

Paris Médical

Oct. 5, 1918, **8**, No. 40

30 Mild Secondary Syndrome of Measles. P. Nobécourt and C. Richet, Jr.—p. 261.
31 *Early Mobilization in Cases of Wounds. P. Kouindjy.—p. 262.
32 Vaccine and Serotherapy of Epilepsy. P. Guiraud.—p. 265.
33 *Albumin in Urine. L. Bauzil.—p. 269.
34 *Sugar Infusions. L. Duprat and A. Demolon.—p. 270.
35 Cancer of Greater Omentum. M. Haller.—p. 271.
36 Trophic Disturbances in Skin of Legs. R. Weill.—p. 274.
37 *Electric Treatment of Exophthalmic Goiter. Olivier.—p. 275.

31. **Early Mobilization After War Wounds.**—Kouindjy deplores that joints are still left to grow stiff when the slightest attempt at using the joint might have warded off the ankylosis or the atrophy. In a typical case described, a barbed wire wound of the hand resulted in a felon, and this was given thorough treatment with sunlight and other

measures, but no one heeded that the arm was being carried in a sling unduly long. By the fifth month fibrous ankylosis of the elbow had developed and has proved rebellious to date. Some of the fingers and the wrist are also stiff, and there was considerable atrophy but these have been remedied with time. He has also witnessed cases of ankylosis of the shoulder, after fracture of the radius, and of the ankle after a seton wound of the thigh. On the other hand, he cites some typical instances which demonstrate anew the advantages of early manual mobilization, and how it stimulates consolidation instead of retarding it. Here is a man with merely a felon on one finger, still crippled after five months, while another man with the shaft of the humerus shattered rejoined his company at the front in four and a half months. The shoulder, elbow and wrist were systematically exercised, with traction on the tendon of the biceps, and the different muscles in turn, except the biceps and those of the forearm and hand, were massaged under a jet of hot air. The arm was exercised further with a double pulley and different weights. No mechanotherapy, either active or passive, was applied as this seems to do more harm than good, when there is a tendency to early ankylosis, as in this case.

33. **Albumin in Urine.**—Bauzil determines the proportions of albumin in the urine by comparing the opacity, after addition of trichloracetic acid, with that of some test solutions.

34. **Sugar Solutions for Infusion.**—Duprat and Demolon spare the kidneys the work of passing through them the large molecules of sugar by having the sugar inverted before it is infused. This ensures also its assimilation, as saccharose or any C_{12} sugar is not utilized but is passed into the kidneys in toto. By inverting the sugar, it can be utilized. In one case of grave insufficiency of the liver, 200 gm. of the isotonic sugar solution was entirely utilized. The formula they give for an isotonic "sugar serum" is as follows: Saccharose, 5.4 gm.; distilled water, q. s. to 100 c.c.; normal solution of hydrochloric acid, 6 drops per 100 c.c. The hypertonic "sugar serum" is the same except that the amount of saccharose is doubled. It is sterilized at 100 C. for forty minutes and then at 110 C. for fifteen minutes. He sterilizes at the same time ampules containing 8 drops of a normal solution of sodium bicarbonate to 1 c.c. As the sugar serum is to be used, the contents of an ampule are added to it, thus neutralizing with 1 c.c. of the bicarbonate solution to each 100 c.c. of the sugar serum.

37. **Electric Treatment of Exophthalmic Goiter.**—Olivier reports two cases for which he bespeaks interest on account of the extreme gravity of the cases—death from inanition or heart failure was only a question of weeks—and the intensity of the electric treatment applied. The applications were with 60 volts and 80 milliampères, with large electrodes fitting well to back and neck. One patient took twenty-seven half hour sittings, the other forty-two, daily at first and later with intervals of a week. The women of 26 and 42 were soon restored to clinical health, and the younger has been successfully carrying on a large farm during the husband's absence with his regiment. Olivier tells them to take occasionally a pill containing a little ipecac, digitalis and opium at times of greatest strain.

Presse Médicale, Paris

Oct. 31, 1918, **26**, No. 60

38 *War Nephritis. A. Gouget.—p. 553.
39 Copper Sulphate in Therapeutics. De Hérain.—p. 555.

Nov. 7, 1918, **26**, No. 61

40 *Immediate Treatment of Spinal Injury. C. Villandre.—p. 561.
41 Indications for Transfusion of Blood in War Surgery. H. Costantini and M. Vigot.—p. 563.

38. **War Nephritis.**—Gouget analyzes his own experiences with 140 cases of nephritis among 7,256 men that passed through his hospital near the front between October, 1914, and March, 1918. Of the total nephritis contingent, seventy-four came from the infantry; seventeen, artillery, and six were hospital orderlies. Among the ninety-three recent cases, a third were evidently secondary to recent typhoid, gonorrhea, syphilis or chilling, and in five cases it had followed after vaccination against typhoid. In fully two-thirds no special cause could be discovered. This is about the same proportion as with nephritis in peace times. There is nothing in the clinical course or ultimate evolution of the cases in which they differ from nephritis under other than war conditions.

40. **Wounds of Spine.**—Villandre protests against the pessimistic views held by many in regard to traumatic injury of the spinal cord. A fracture of a vertebra is often assumed to be a severing of the spinal cord, and it is held impossible to send the man to a specialist center. Fracture of a vertebra impairs but very little the solidity of the spine, so that immobilization is not indispensable. The man should be taken to some point where he can get the collaborating care of a neurologist, surgeon and radiologist. From the very first all medical means should be applied to ward off eschars and urinary infection, and at the earliest possible moment everything liable to press on the cord should be cleared away.

Progrès Médical, Paris

Oct. 5, 1918, **33**, No. 40

42 Intravenous Injection of Camphorated Oil in Treatment of Shock. F. Ferrari.—p. 337; G. Jeanneney.—p. 340.

Oct. 12, 1918, **33**, No. 41

43 *Flatulent Dyspepsia with Exophthalmic Goiter. M. Loeper.—p. 345.
44 Quinin in Prophylaxis of Influenza. R. Tricoire.—p. 347.
45 *Physicians and Poetry. P. Voivenel.—p. 348.

43. **Flatulent Dyspepsia with Hyperthyroidism.**—Loeper states that in four of forty cases of exophthalmic goiter, there was diarrhea and in thirteen cases pronounced dyspepsia. In ten of this latter group there was a tendency to spasm of the esophagus, at different heights. The efforts at swallowing caused much air to be swallowed, and this induced flatulence and meteorism. The air in the stomach may impede its functioning, and there is always a possibility of direct toxic action on the stomach from the disease. Thus both mechanical and toxic factors may cooperate in inducing the type of flatulent dyspepsia in these cases. Improvement is realized by combating the aerophagia and also by operations on the thyroid or other measures to control the hyperthyroidism.

45. **The Nervous Potential.**—Voivenel theorizes that all men are born with an equal *sensibilité, affectivité* or *potentiel nerveux*. It manifests itself in different ways, but, like sap, it has to come up. Charcot, Janet and Freud have shown us the evil consequences of "blocking of the *Affect*." When the excitation, the potential energy does not find a natural outlet, when it cannot be dissipated in the ordinary routine of life, it finds expression in hobbies, in fads of one kind or another. In physicians, it often finds vent in poetry. "The number of practitioners who tickle the muses is legion." . . . "Most of them hide their identity when they do this, but the physician of the day is a philosopher, a *littérateur* or a poet in heart if not in outward manifestation." Voivenel gives a long list of living French confrères who have won recognition as playwrights, novelists or poets. He concludes his list with Prof. Charles Richet who, he says, "washed off anaphylaxis by plunging into poetry, and carried off one of the best academic prizes from under the noses of the professional poets." . . . "These side issues serve as a drain to their nervous potential. It does not go beyond this *menstruation de l'affect*." . . . "One plants roses, another plants cabbages. Which is worth most? It is a matter of opinion. Ask the caterpillars."

Correspondenz-Blatt für Schweizer Aerzte, Basel

Oct. 26, 1918, **48**, No. 43

46 *Resection of Stomach. H. Iselin.—p. 1425.
47 Organotherapy of Menstrual Disturbances. O. B. Socin.—p. 1431.
48 *Tardy Mercurial Exanthem. M. Umansky.—p. 1435.
49 Clinical Demonstration of the Nerve Fibers in the Retina. J. Strebel.—p. 1442.

46. **Resection of the Stomach for Chronic Ulcers.**—Iselin refers in particular to callous ulcer of the lesser curvature and other ulcers nearer the cardia than the pylorus. He is convinced that only a radical operation will guarantee a permanent cure, while this is the only means to ward off malignant degeneration. He reports transverse resection done in thirteen cases, and while de Quervain applied the Billroth II technic and its modifications, Iselin preferred to restore

the stomach to its approximately normal outline, joining the halves left with a circular suture all around. In his seven cases the technic was entirely successful, and he cites similar experiences from the literature, as also experiences with recurrence of disturbances after mere gastro-enterostomy, and especially malignant degeneration. In eight of Iselin's total twenty-one cases the tumor already showed signs of cancer in the resected piece although, in some, clinically and macroscopically there had been no suspicion of malignant disease. In 1915 he resected the stomach for known cancer in nine cases, and in three the cancer had evidently developed from an ulcer, while an exploratory operation in another presented the same findings. There had been disturbances in these cases from six to twenty-four years. One woman after transverse resection in 1914 died later from cancer of the liver; necropsy revealed a carcinoma at the pylorus although the microscopic findings in the excised ulcer had been those of simple ulcer. It is possible that if the Billroth technic had been followed, this other cancer might have been removed also, so that with known cancer the Billroth II or I might be given the preference. It is possible further that the malignant nature of the excised ulcer might have been recognized if a larger piece had been examined under the microscope.

48. **Tardy Mercurial Eruption.**—Thirty-three days after a vigorous course of mercurial and arsphenamin treatment had been concluded, the man of 33 developed a generalized and severe dermatitis with high fever. By this time there were only traces of mercury in the urine, showing that the eruption could not have been due to cumulative action. Umansky believes that the previous treatment had modified the skin in such a way that an idiosyncrasy developed, although intercurrent functional disturbances of internal organs may have cooperated.

Policlinico, Rome

Oct. 6, 1918, **25**, No. 40

50 *The Epidemic of Influenza. T. Pontano.—p. 941.
51 *Epidemic Lethargic Encephalitis. G. Dragotti.—p. 952.
52 The Bipolar Influenza Bacillus not a New Type. M. L. della Vida.—p. 954.

Nov. 10, 1918, **25**, No. 45

53 *War Wounds of Nerves. M. Fasano.—p. 1077. Conc'n.
54 *The Bipolar Influenza Bacillus. R. Ciauri.—p. 1080.
55 *Activation of Malaria. E. Vecchia and M. Segre.—p. 1081.
56 *Soldering of Wire for Osteosynthesis. G. Egidi.—p. 1082.
57 *Technic for Cystoscopy. G. Egidi.—p. 1083.

October, 1918, **25**, Medical Section No. 10

58 *Medical Treatment of Dysenteric Abscess in Liver. T. Pontano.—p. 289.
59 *Clinical Forms of Malaria. A. Borgherini.—p. 308. Conc'n.

50. **Influenza.**—Pontano reports from the medical clinic at Rome, in charge of Ascoli, that the bacteriologic findings were negative both in blood and sputum except for the ordinary germs of the air passages. Inoculation of animals was negative. The influenza bacillus was not found. He thinks that the unknown, probably ultramicroscopic, germ of influenza modifies the lungs in such a way that other germs find ready access to the predisposed soil.

51. **Lethargic Encephalitis.**—The fact that the epidemic of lethargic encephalitis coincided in 1890 with the pandemic of influenza, suggests that it is a localization on the brain of the influenza virus. The disease has appeared anew in the last few months along with pandemic influenza. Both the encephalitis and the influenza commence with a similar onset of catarrhal rhinopharyngitis. Dragotti regards it as identical with the disease known as nona, which was prevalent in Italy at the time of the last pandemic of influenza.

53. **War Wounds of Nerves.**—Fasano concludes from the experiences in the Italian military hospitals that *no time* should be lost in thorough examination of men with painful paralysis. Operative relief should be given at *once*, as this wards off atrophy and ankylosis. When there are no pains, then it is open to discussion whether the gains compensate the disadvantages of operating before the wound is completely healed. During the entire operation, the nerve itself must be continuously flushed with tepid physiologic serum. It must never be left in contact with raw surfaces, but sound muscle or fascia must be drawn around to cover it.

54. **The Bipolar Bacillus of Influenza.**—Ciauri reports the results of further research on the diplomorphous hemoseptic bipolar bacterium which seems to be connected with influenza as described in these columns recently, p. 1700. Among its peculiarities is the long incubation; sometimes five days elapse before the colonies become unmistakable. The *a* form, gram-positive, stains violet with fuchsin, while the *b* form, gram-negative, stains red. These bacteria were cultivated from sputum, blood and urine from the patients and from agar plates breathed on by the patients at 25, or 40 cm. distance. The only animals tested were rabbits, guinea-pigs and fowls. Some of them developed a slow septicemia and the guinea-pigs showed hypothermia, the rabbits slight hyperthermia, but no macroscopic changes in the viscera. The bipolar bacillus proliferates after exposure to dry heat at 80 C. for one hour, and to the freezing point for five hours. The bacillus shows no further development after an hour of moist heat at 100 C. or exposure to 55 C. for five hours. No effect on the bacterium was evident from fifteen and three minutes' contact with 1 per 200,000 or per 100,000 mercuric chlorid solution. These findings although practically negative in the animals tested, yet harmonize with the epidemiology of the disease and suggest means for prophylaxis. The air around the patient contains the germ even in the absence of droplets, and the disease is shown to be septicemia. The practical conclusions are the necessity for free ventilation through the sick room, and redoubled vigilance, with masks, for the physicians and attendants.

55. **Strychnin Activates Malaria.**—Vecchia and Segre have noticed that a malarial attack is liable to follow a dose of strychnin, just as it follows chilling or other cause of abrupt reduction of the defensive forces. They found in Albania that men with old latent malaria had a flare-up attack when given strychnin, and that many of them under quinin then seemed to throw off the disease permanently. In certain others, not suspected of malaria, the strychnin brought on a malarial attack. The strychnin was being given for other reasons, mostly to combat asthenia. It stimulates the tissues throughout, and the malaria bacilli seem to be driven out of the tissues by the strychnin. They are thus exposed more effectually to the action of quinin, so that it seems logical to combine strychnin with quinin in treating old rebellious cases of malaria. Their success in twenty such cases they report as particularly interesting. They say in conclusion that a few large doses of strychnin would decide the question finally whether the malaria was absolutely cured.

56. **Soldering the Wires in Osteosynthesis.**—By this term Egidi means the rebuilding of the shattered bone by fitting all the parts into place and holding them with an encircling wire. The ends of the wire are usually twisted or knotted together, and he here makes a plea to have the ends soldered together instead of twisting them. In all mechanical work, wires are soldered, and nowhere would the advantages be more conspicuous than in the encircling wire of a reassembled bone. To solder a silver wire, he touches the ends where they cross with a pledget barely moistened with zinc chlorid. On this is placed a scrap of tin, and the thermocautery is touched to the tin. It melts at once and the wire is firmly soldered. The projecting ends are cut off; if any sharp point is left this can be buried, too, in a droplet of tin. Or a wedge shaped piece of copper can be heated in the flame and the tip pressed on a block of ammonium chlorid and then on a lump of tin. It melts enough of the tin, which sticks to it, and this is then transferred to the wire to be soldered, already treated with the mordant. There are no twisted ends to compress tissue or break at the weakest point. This soldering of the wire has proved especially useful in cases of fracture of the jaw.

57. **To Transform Street Electric Current for Cystoscope.**—Egidi gives an illustration of a simple home-made device to serve as a rheostat.

58. **Medical Treatment of Dysenteric Abscesses in the Liver.**—The complete failure of surgical measures, in some cases in Macedonia, encouraged Pontano to rely on medical measures alone. His success in some typical cases related has amply demonstrated that with an ameba abscess the

resulting necrosis of liver tissue must be regarded differently from the ordinary pus of a bacterial process. The products of the protozoan process are reabsorbed under the influence of emetin. His cases illustrate the rapid and complete reabsorption of a vast abscess in the liver, even in a case in which there was known associated colon bacillus infection. In this case the liver was reduced from 22 to 12 cm. above the costal arch in twelve days; the leukocytes dropped from 19,000 to 7,500, and repeated examinations of the stools since seem to indicate that the amebic dysentery and the abscess have both been cured. Exploratory puncture in this case had revealed the colon bacillus while encysted amebas were common in the stools. He reiterates in conclusion that "no operation should be attempted for a dysenteric abscess in the liver until a massive course of emetin treatment has been put through."

59. **Clinical Forms of Malaria.**—In concluding this long article Borgherini warns that malaria of a pernicious type, as severe as in the tropics, is encountered now in the near Eastern campaign. The attempt to segregate troops with malaria has failed as the numbers are too large for this.

Rivista di Clinica Pediatrica, Florence

October, 1918, **16**, No. 10

60 *Morbid Associated Movements in Children. P. Busacchi.—p. 505.
61 Growth and Pathology of Twins. A. Borrino.—p. 521. Commenced in No. 9, p. 474.

60. **Synkinesis in Children.**—The case of associated movements described was in a boy of 6 with postdiphtheric paralysis. The muscles of the face and hands were drawn up and distorted with each syllable he tried to speak, even the simplest words. There was no lesion in the cortex, and the synkynesis was bilateral—in both of which points the case differs from others on record, Busacchi remarks. The diphtheric toxin while it paralyzed some of the nerves, seemed to have rendered others more excitable. He describes in detail the probable mechanism of pathologic associated movements in such cases, and reviews the literature.

Gaceta Medica de Caracas

Sept. 15, 1918, **25**, No. 17

62 Organized Prophylaxis of Venereal Diseases. E. Ochoa.—p. 175.
63 Present Status of Intravenous Bacteriotherapy of Typhoid. E. P. de Bellard.—p. 180.

Revista de la Asociación Mêdica, Buenos Aires

August, 1918, **29**, No. 165

64 *Perforated Chronic Gastric Ulcer. C. I. Allende.—p. 143.
65 Memoirs of Medical Hygienist. E. R. Coni.—p. 158. Cont'n.
66 *Action of Epinephrin on Frog Heart. C. F. Flores.—p. 207.
67 Radiologic Ambulance. C. Heuser.—p. 212.
68 *Lingual Goiter. J. M. Jorge, Jr., and J. Layera.—p. 246.
69 Disarticulation for Chondroma of Femur. N. Tagliavacche.—p. 289.
70 Reflexions on Tuberculosis. J. J. Vitón.—p. 299. Cont'n.
71 Vagotony. A. Austregésilo.—p. 312.

64. **Perforated Chronic Gastric Ulcer.**—The four cases analyzed by Allende presented as the principal element for the diagnosis the sudden intense pain in the epigastrium, usually in the midst of apparent health. Insistent questioning will generally reveal symptoms in the past suggesting possible ulceration. The pulse may keep normal or a little below for the first few hours, which may prove misleading. He advises pouring ether into the peritoneal cavity in concluding the operation, with ample drainage.

66. **Epinephrin and the Frog Heart.**—Flores relates that the heart of the common Argentine frog displays certain physiologic differences from similar animals in Europe and North America. He describes research with epinephrin.

68. **Lingual Goiter.**—Jorge and Layera report in detail two cases of an aberrant thyroid gland at the base of the tongue. Both patients were young women, and the tumor was resected in each. They discuss the literature on the subject, and tabulate the forty-six other cases on record. During the day there is only slight if any interference with breathing, even when the epiglottis is pushed aside by the tumor. But at night, when the muscles of the tongue relax in sleep, there may be episodes of suffocation in certain positions. The tumor may escape detection unless an effort is made to arch the tongue at its base; this throws the tumor into view. The laboratory will exclude syphilis and tuberculosis. With any aberrant goiter, it is necessary to determine whether there is any tendency to thyroid deficit before attempting to remove any or part of the tumor. They regard this as so important that they advise an exploratory incision of the normal thyroid before venturing to remove an aberrant thyroid tumor. Whatever technic is followed for removal of the tumor, tracheotomy seems to be indispensable not only to maintain the respiration but for information in regard to the natural thyroid. Two of the total fifty cases were in infants; there was recurrence after operation in six cases, and postoperative myxedema developed in seven. A colored plate shows the aspect of the lingual thyroid in one case. It contained patches of calcareous degeneration in the one case in which the tumor was removed through an incision. In the other case, it was removed through the mouth under local anesthesia. In two cases the natural thyroid was lacking, and symptoms of myxedema contraindicated any operation.

Semana Medica, Buenos Aires

July 18, 1918, **25**, No. 29

72 Uterine Fibromas. C. A. Castaño.—p. 69.
73 Multiple Nipples. (Politelia.) C. Lanza.—p. 79.
74 Dynamic Retinoscopy. J. L. Pavia.—p. 88.

July 25, 1918, **25**, No. 30

75 Mycotic Flora of Female Genitals. F. A. Deluca.—p. 97.
76 Technic for Film Treatment of Burns. J. M. and M. E. Jerez.—p. 112.
77 Vaccine Treatment of Acne. H. Dasso.—p. 114.
78 Physiologic Phenomena in the Newborn. U. Fernândez.—p. 115.

Hospitalstidende, Copenhagen

Oct. 16, 1918, **61**, No. 42

79 *Cartilaginous Exostoses. B. Agerholm.—p. 1425. Commenced in No. 41.
80 *Lipomas as Cause of Ileus. J. Lambrethsen.—p. 1433.

79. **Intermittent Painful and Febrile Cartilaginous Exostoses.**—The case reported by Agerholm is the fourth case on record in which there were recurring attacks of pain, with fever. Nine cases are cited from the records in which the exostoses were painful and tender at times. It is possible that there may be a very mild process of osteomyelitis involved. In Fischer's case, in a boy of 5, each new exostosis as it developed was accompanied by high fever and pains in the bones. In Pels-Leusden's case the first exostosis developed at the age of 28, each new one appearing with fever, pains, loss of appetite and vomiting (unless the patient exaggerated).

80. **Lipomas as Cause of Intermittent Ileus.**—Lambrethsen states that a submucous tumor on a long pedicle obstructed the lumen at the ileocecal junction, causing intermittent ileus in the unmarried woman of 38. In a second case a man of 62 for six years had been having peculiar recurring pains in the abdomen, and vomiting. The intervals were finally only three or four weeks, and the attacks lasted a few hours or days. The symptoms indicated incomplete ileus, and an operation revealed chronic invagination of the upper part of the jejunum entailed by a polypous mucosa tumor. Fully 90 cm. of the bowel were involved in the invagination. He has found records of only fifty-seven similar cases on record, and only thirty-nine were operative cases; the others were casual discoveries. About 50 per cent. were in the large intestine. In a few cases the tumor sloughed off and was eliminated in the stools. In Ninaus' case a stretch, 120 cm. long, was evacuated spontaneously and the patient recovered. The ileus was grave in many cases and from 40 to 50 per cent. succumbed. The prognosis is more favorable when the large intestine alone is involved. In one of his cases there was occult bleeding.

Ugeskrift for Læger, Copenhagen

Oct. 24, 1918, **80**, No. 43

81 Habitual Constipation. VII. T. E. H. Thaysen.—p. 1691. To be continued.
82 Papillomatosis in Rudimentary Urethra with External Female Pseudohermaphroditism. P. Verning.—p. 1701.

JOURNALS ABSTRACTED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT, JULY-DECEMBER, 1918

The following journals have been abstracted in the Current Literature Department of THE JOURNAL during the past six months. Any of the foreign journals, except those starred, will be lent by THE JOURNAL to subscribers in the United States and to Fellows of the American Medical Association for a period not exceeding three days. Only one journal may be borrowed at a time. Requests for periodicals should be addressed to the Library of the American Medical Association and six cents in stamps should be enclosed. This covers the average expense of mailing a journal. Domestic journals can be obtained by sending the approximate amount direct to the respective publishers. Thus most of the journals indexed are accessible to the general practitioner, no matter where he may be located.

Acta Scholae medicinalis universitatis imperialis in Kioto. Irregular. 1.50 yen. Kioto.
Amazonas medico. Q. Manaos.
American Journal of Anatomy. Bi-m. $7.50. 36th St. and Woodland Ave., Philadelphia.
American Journal of Diseases of Children. M. $4. American Medical Association, 535 N. Dearborn St., Chicago.
American Journal of Insanity. Q. $5. Johns Hopkins Press, Baltimore.
American Journal of the Medical Sciences. M. $5. Lea & Febiger, 706 Sansom St., Philadelphia.
American Journal of Obstetrics and Diseases of Women and Children. M. $5. William Wood & Co., 51 Fifth Ave., New York.
American Journal of Ophthalmology. M. $10. 7 W. Madison St., Chicago.
American Journal of Orthopedic Surgery. M. $4. 126 Massachusetts Ave., Boston.
American Journal of Physiology. M. $5. Johns Hopkins Medical School, Baltimore.
American Journal of Public Health. M. $3. 126 Massachusetts Ave., Boston.
American Journal of Roentgenology. M. $5. 69 E. 59th St., New York.
American Journal of Syphilis. Q. $5. C. V. Mosby Co., St. Louis.
American Review of Tuberculosis. M. $3. 2419 Greenmount Ave., Baltimore.
Anales de la Facultad de medicina, Montevideo. Bi-m. $2. Montevideo.
Anales de la Facultad de medicina, Universidad de Lima. Bi-m. 6 soles. Lima, Peru.
Anales del Instituto Modelo de clinica medica. Irregular. Gratis. Buenos Aires.
Annaes Paulistas de medicina e cirurgia. M. 15 milreis. São Paulo.
Annales de gynécologie et d'obstétrique. M. 22 francs. Paris.
Annales de médecine. M. 23 francs. Paris.
Annali d'igiene. M. 20 lire. Rome.
Annals of Medical History. Q. $6. Paul B. Hoeber, 67 E. 59th St., New York.
Annals of Surgery. M. $6. J. B. Lippincott Co., 227 S. 6th St., Philadelphia.
Annals of Tropical Medicine and Parasitology. Q. $5. Liverpool.
Archives of Internal Medicine. M. $5. American Medical Association, 535 N. Dearborn St., Chicago.
Archives des maladies de l'appareil digestif et de la nutrition. M. 14 francs. Paris.
Archives des maladies du cœur, des vaisseaux et du sang. M. 22 francs. Paris.
Archives médicales belges. M. 18 francs. Paris.
Archives de médecine des enfants. M. 18 francs. Paris.
Archives de médecine et de pharmacie militaires. M. 40 francs. Paris.
Archives mensuelles d'obstétrique et de gynécologie. M. 25 francs. Paris.
Archives of Ophthalmology. Bi-m. $5. G. P. Putnam's Sons, 2 W. 45th St., New York.
Archives of Pediatrics. M. $3. E. B. Treat & Co., 45 E. 17th St., New York.
Archives of Radiology and Electrotherapy. M. $5. London.
Archivos Españoles de enfermedades del aparato digestivo y de la nutricion. M. 14 pesetas. Madrid.
Archivos Españoles de pediatria. M. 18 pesetas. Madrid.
Archivos Latino-Americanos de pediatria. Bi-m. $3. Buenos Aires.
Boletin de la asociación médica de Puerto Rico. Q. San Juan, Porto Rico.
Boston Medical and Surgical Journal. W. $5. 126 Massachusetts Ave., Boston.
Brazil-medico. W. 20 milreis. Rio de Janeiro.
British Journal of Children's Diseases. Q. $5. London.
British Journal of Surgery. Q. $6.50. William Wood & Company, 51 Fifth Ave., New York.
British Journal of Tuberculosis. Q. $1.25. G. E. Stechert & Co., 151 W. 25th St., New York.
British Medical Journal. W. $10. London.
Bulletin de l'Académie de médecine. W. 23 francs. Paris.
Bulletin of the Johns Hopkins Hospital. M. $3. Baltimore.
Bulletin of the Naval Medical Association of Japan. Irregular. Tokyo.
Bulletins et mémoires de la Société médicale des Hôpitaux de Paris. W. 32 francs. Paris.
California State Journal of Medicine. M. $1. Butler Bldg., San Francisco.
Canadian Medical Association Journal. M. $5. 386 Victoria St., Toronto.
Chirurgia clinica. M. 45 lire. Milan.
Chirurgia degli organi di movimento. Bi-m. 35 lire. Bologna.
Colorado Medicine. M. $2. *Metropolitan* Bldg., Denver.
Correspondenz-Blatt für schweizer Aerzte. W. 22 francs. Basel.
Cronica medica. Semi-m. 15 francs. Lima, Peru.
Crónica médico-quirúrgica de la Habana. M. 4 pesos. Havana.
Delaware State Medical Journal. M. $1. Wilmington.
Dublin Journal of Medical Science. M. $5.
Edinburgh Medical Journal. M $6.
Endocrinology: Bulletin of the Association for the Study of Internal Secretions. Q. $5. 1100-1103 Title Insurance Bldg., Los Angeles.
Gaceta de los hospitales. Revista mensual de ciencias medicas. M. $5. Mexico.
Gaceta médica de Carácas. Semi-m. 16 bolivares. Carácas, Venezuela.
Gaceta médica de México. Irregular. $6. Mexico City.
Gaceta medica de Costa Rica. M. $6.00. Costa Rica.
Gann. Irregular. Tokyo.
Gazzetta degli ospedali e delle cliniche. Semi-w. 25 francs. Milan.
Glasgow Medical Journal. M. $5.
Grèce *médicale*. Semi-m. 12 francs. Athens.
Hospitalstidende. W. 27.5 kronen. Copenhagen.
Hygiea. M. $5. Stockholm.
Illinois Medical Journal. M. $2. 3338 Ogden Ave., Chicago.
Indian Journal of Medical Research. Q. 10s. Calcutta.
Indian Medical Gazette. M. $5. Calcutta.
International Association of Medical Museums. Irregular. Ann Arbor, Mich.
Journal of the American Medical Association. W. $5. 535 N. Dearborn St., Chicago.
Journal of the Arkansas Medical Society. M. $1. Boyle Bldg., Little Rock, Ark.
Journal of Bacteriology. Bi-m. $5. Williams & Wilkins Company, Baltimore.
Journal of Biological Chemistry. M. $3. 2419 Greenmount Ave., Baltimore.
Journal of Cancer Research. Q. $5. Williams & Wilkins Company, Baltimore.
Journal de chirurgie. M. 44 francs. Paris.
Journal of Cutaneous Diseases. M. $5. 7 W. Madison St., Chicago
Journal of Experimental Medicine. M. $5. Rockefeller Institute for Medical Research, 66th St. and Avenue A, New York.
Journal of the Florida Medical Association. M. $1.50. P. O. Box 136, Jacksonville, Fla.
Journal of General Physiology. Bi-m. $5. Rockefeller Institute for Medical Research, *66th* St., *and* Avenue A, New York.
Journal of Immunology. Bi-m. $5. Williams & Wilkins Company, Baltimore.
Journal of the Indiana State Medical Association. M. $2. 406 W. Berry St., Fort Wayne, Ind.
Journal of Infectious Diseases. M. $5. 629 S. Wood St., Chicago.
Journal of Iowa State Medical Society. M. $2. Des Moines.
Journal of Kansas Medical Society. M. $2. 303 Commerce Bldg., Topeka, Kan.
Journal of Laboratory and Clinical Medicine. M. $3. C. V. Mosby Company, St. Louis.
Journal of Laryngology, Rhinology and Otology. M. $5. London.
Journal of Maine Medical Association. M. $2. Portland, Maine.
Journal of Medical Association of Georgia. M. $1. Lamar Bldg., Augusta, Ga.

W.—Weekly; M.—Monthly; Semi-m.—Semi-monthly; Bi-m.—Bi-monthly; Q.—Quarterly. *Cannot be loaned.

Journal of Medical Research. Bi-m. $4. 240 Longwood Ave., Boston.
Journal of Medical Society of New Jersey. M. $2. 12 Cone St., Orange, N. J.
Journal de médecine de Bordeaux. M. 15 francs.
Journal of Michigan State Medical Society. M. $3.50. Powers' Theatre Bldg., Grand Rapids, Mich.
Journal of Missouri State Medical Association. M. $2. 3517 Pine St., St. Louis.
Journal of Nervous and Mental Diseases. M. $8. 64 W. 56th St., New York.
Journal of Oklahoma State Medical Association. M. $2. Muskogee.
Journal of Parasitology. Q. $2. Urbana, Ill.
Journal of Pharmacology and Experimental Therapeutics. M. $5. 2419 Greenmount Ave., Baltimore.
Journal de radiologie et d'électrologie. M. 28 francs. Paris.
Journal of South Carolina Medical Association. M. $2. Greenville, S. C.
Journal of State Medicine. M. 2 shillings. London.
Journal of Tennessee State Medical Association. M. $2. 601 Cedar St., Nashville, Tenn.
Journal of Tropical Medicine and Hygiene. Semi-m. $5. London.
Journal d'urologie médicale et chirurgicale. M. 42 francs. Paris.
Journal of Urology. Bi-m. $5. Williams & Wilkins Co., Baltimore.
Journal-Lancet. Semi-m. $2. 839 Lumber Exchange, Minneapolis.
Kentucky Medical Journal. M. $2. State and Twelfth Sts., Bowling Green, Ky.
Kitasato Archives of Experimental Medicine. Twice a year. 60 cents. Tokyo.
Lancet. W. $10. London.
Laryngoscope. M. $5. 3858 Westminster Place, St. Louis.
Lyon chirurgical. M. 25 francs.
Lyon médical. M. 15 francs.
Mededeelingen van den Burgerlijken Geneeskundigen Dienst in Nederlandsch-Indië. Irregular. Price varies. Batavia, Java.
Medical Journal of Australia. W. 6 d. Sydney.
Medical Journal of the Siamese Red Cross. 5 ticals. Bangkok.
Medical Record. W. $5. W. Wood & Co., 51 Fifth Ave., New York.
Medicina Ibera. W. 25 pesetas. Madrid.
Medicine and Surgery. M. $4. Medicine and Surgery Publishing Co., Metropolitan Bldg., St. Louis.
Mental Hygiene. Q. $2. National Committee for Mental Hygiene, 50 Union Square, New York City.
Military Surgeon. M. $3.50. Army Medical Museum, Washington, D. C.
Minnesota Medicine. M. $2. Lowry Bldg., St. Paul.
Mitteilungen aus der medizinischen Fakultät der Kaiserlichen Universität Kyushu. Irregular. Price varies. Fukuoka.
Mitteilungen aus der medizinischen Fakultät der Kaiserlichen Universität zu Tokyo. Irregular. Price varies. Tokio.
Modern Hospital. M. $3. Metropolitan Bldg., St. Louis.
National Medical Journal of China. $2. Shanghai.
Nebraska State Medical Journal. M. $2.00. 468 Brandeis Bldg., Omaha.
Nederlandsch Tijdschrift voor Geneeskunde. W. 10.50 florins. Amsterdam.
Neurological Bulletin. M. $3. 69 E. 59th St., New York.
New Orleans Medical and Surgical Journal. M. $2. 1551 Canal St., New Orleans.
New York Medical Journal. W. $5. A. R. Elliott Publishing Co., 66 W. Broadway, New York.
New York State Journal of Medicine. M. $2. 17 W. 43d St., New York.
Norsk Magazin for Lægevidenskaben. M. $5. Christiania.
Northwest Medicine. M. $2. Cobb Bldg., Seattle, Wash.
Nourrisson. Bi-m. 14 francs. Paris.
Ohio State Medical Journal. M. $2. Physician's Bldg., Columbus.
Paris médical. W. 16 francs.
Pediatria. M. 20 lire. Naples.
Pennsylvania Medical Journal. M. $2. Athens, Pa.
Philippine Journal of Science. Irregular. $3. Manila, P. I.
Policlinico. W. 32 lire. Rome.
Practitioner. M. $6.50. London.
Prensa médica argentina. Semi-m. 25 francs. Buenos Aires.
Presse médicale. Semi-w. 15 francs. Paris.
Progrès médical. W. 12 francs. Paris.
Progresos de la clinica. M. 25 pesetas. Madrid.
Public Health Journal. M. $2. York Publishing Co., 169 Bay St., Toronto.
Quarterly Journal of Medicine. $6.50. London.
Reforma medica. M. 6 soles. Lima.
Repertorio de medicina y cirugía. M. $3. Bogotá, Colombia.
Revista clinica. Q. $1. Medellin.
Revista de la Asociación médica argentina. M. Buenos Aires.
Revista de medicina y cirugia de la Habana. Semi-m. $4.50. Havana.
Revista de la Universidad de Buenos Aires. M. $5. Buenos Aires.
Revista de medicina y cirugia prácticas. W. 30 pesetas. Madrid.
Revista del Instituto bacteriologico. Q. Buenos Aires.
Revista dos Cursos. Irregular. Porto Alegre.
Revista Española de medicina y cirugia. M. 24 pesetas. Barcelona.
Revista Ibero-Americana de ciencias médicas. M. Madrid.
Revista médica cubana. M. Havana.
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SUBJECT INDEX

This is an index to all the reading matter in The Journal. In the Current Medical Literature Department only the articles which have been abstracted are indexed.

The letters used to explain in which department the matter indexed appears are as follows: "E," Editorial; "C," Correspondence; "T," Therapeutics; "Ml," Medicolegal; "P," Propaganda for Reform; "ME," Medical Economics; "ab," abstract; the star (*) indicates an "Original Article" in The Journal.

This is a subject index and one should, therefore, look for the subject word, with the following exceptions: "Book Notices," "Deaths" and "Society Proceedings" are indexed under these titles at the end of the letters "B," "D" and "S." Matter pertaining to the Association is indexed under "American Medical Association."

The name of the author follows the subject entry in brackets. The figures in parentheses refer to the paragraph in the Current Medical Literature Department, the number following to the page in The Journal.

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